

**COLUMBUS STATE  
UNIVERSITY**

**RESEARCH**  
2018

**SYMPOSIUM**  
**UNDERGRADUATE**  
**RESEARCH AND**  
**CREATIVE ENDEAVORS**

**APRIL 12**



COLUMBUS STATE  

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UNIVERSITY

# APRIL 12

Join us for an event of academic dialogue and celebration at CSU. Tower Day is an annual celebration of CSU undergraduate research and creative endeavors. CSU students from different disciplines present their research, creative practice, SAGE program and QEP We Solve It poster presentations. Students give 20-minute presentations, facilitate poster sessions, art display, and performance.

This program is designed as an initiative to give CSU students an opportunity to share the research outside the classroom. Divided into morning events and afternoon sessions, with keynote presentations by a faculty and an alumni, professional practice workshop, art exhibitions and musical performance.

# Program

9:00 - 10:30	Registration at the Davidson Student Center Lounge
9:00 - 10:45	Poster Setup Davidson Student Center Lounge Area Columbus Room
11:00 - 12:00	Keynote Speakers Dr. Aisha Adams Ms. Kim Crowell, class of 2012 Davidson Auditorium
12:00 - 1:00	Reception Davidson Auditorium Lobby
12:00 - 1:00	Poster Presentations, QEP We Solve It Presentations, and Judging Davidson Center Lounge Columbus Room
12:30 - 2:30	Professional Development WIT Interactive Workshop Davidson Auditorium
12:30 - 4:30	Oral Presentations and Judging Schuster 101 and 130 Davidson 254, 256, 258, and Auditorium
5:00 pm	Art Exhibition Reception, Musical Performance and Awards Davidson Center Lobby

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# KEYNOTE



## ***“How Our Brain Betrays Us”***

**Dr. Aisha Adams** has been an Assistant Professor of Psychology at Columbus State University since 2016. Previously she was an Assistant Professor at Midwestern State University in Wichita Falls, TX. Dr. Adams received her PhD and MS in Psychology from the University of Georgia in 2013 and 2009, respectively, with a specialization in Visual Perception and Memory research. Her dissertation, entitled “The Role of Gist Processing in Boundary Extension”, explored factors, such as depth cues, that influence the Boundary Extension effect. Dr. Adams is currently working on how emotional scenes, such as a violent car crash or attack, can influence one’s perception of that image and subsequently, their memory for the situation.

When we experience the world around us, we tend to think that how we perceive the world, and thus remember it, is EXACTLY how it actually was. However, research from the visual perception and memory fields show us that this is far from the truth. Rather, we are constantly modifying and creating our experience as we go to make sense of the world. In this talk, I will discuss my research into a phenomenon called Boundary Extension, a perceptual memory error in which we add more information from a scene than was actually presented. I will provide potential explanations for this error and discuss the potential implications.

# KEYNOTE

***“Welcoming All:  
Increasing Access  
in Museums”***



**Kim Crowell** is the Associate Museum Educator and Accessibility Coordinator at Crystal Bridges Museum of American Art in Bentonville, Arkansas, where she creates programming for visitors with disabilities and works across departments to make the museum more accessible in general. Crowell has a B.F.A. in Studio Art with a focus in drawing and painting from Columbus State University in 2012, and she recently joined the Crystal Bridges team after completing an M.A. in Museum Studies at the University of Florida.

The focus of Crowell's graduate research at the University of Florida was to identify ways to make museums more accessible for visitors with disabilities, and she is particularly passionate about creating programming for visitors with all levels of sight. Crowell has spearheaded the development of multi-sensory tour materials at the Columbus Museum in Georgia and the Harn Museum of Art in Florida, and she continues her research with this topic at Crystal Bridges Museum of American Art.

# ART

DAVIDSON LOUNGE  
ART WALL  
1 :00 - 5:30 PM

## ***Nature's Prototypes***

Works by **Taylor Bardon**

Mentor: Professor Hannah Israel

*Nature's Prototypes* is an ongoing science fictional, narrative series by Taylor Bardon, a digital illustrator and a sequential artist. The series' conception began circa late 2016 as Bardon began to develop his personal portfolio. Through a narrative mode that blends realism and fiction, Bardon uses various biological fields, such as ecology, pathology, and bioengineering, to imagine action-centric, character-driven vignettes.

## ***FaustFall***

Works by **Steven Bardon**

Mentor: Professor Hannah Israel and Professor Orion Wertz

*FaustFall* is an ongoing dark fantasy comic series by Steven Bardon, a traditional illustrator and sequential artist. The series originated in mid-May 2016 after he created a prototype comic entitled *Herald to Herne*. Shifting from a vignette-based methodology, Bardon borrowed from an array of characters and ideas conceptualized throughout his early years as an artist, and combined them with spiritualistic elements found in Christianity and Paganism.

# MUSIC

DAVIDSON LOUNGE  
STAGE  
5:00 PM

Performed by LatAsian Duo  
**Carlos Lopez and David Kim**

Sonata for Clarinet and Bassoon  
by Francis Poulenc (1899-1963)  
Allegro  
Romance  
Final

Mentors: Dr. Stephanie Patterson and  
Dr. Lisa Oberlander

The LatAsian Trio was invited to perform four recitals at "El Encuentro Nacional de Fagot" Mexico City and three other recitals in Mexico. Besides Glinka's Trio Pathetique and Mendelssohn's Concert Piece for Clarinet, Bassoon and Piano, they performed Brahm's Clarinet Sonata no.1 in F minor, Fantasiestucke Op.73 for Bassoon and Piano by Robert Schumann, and Nocturne op.48 #1 in C minor for piano solo by F. Chopin. The pianist of the LatAsian Trio will not be able to perform in Tower Day.

Carlos Lopez, bassoon student, won the first place at the Bassoon National Meeting-Competition in Mexico City.



# POSTER SESSIONS

## **COLUMBUS ROOM/TABLE 1**

Lead Presenter: **Joslyn Hobbs**

Mentor: Dr. Richard Newtonson  
Criminal Justice & Sociology  
Georgia Sociological Association

*The Effects of Title 11 and 111 and Section 504 and Section 508 of the Rehabilitation act of 1973 on Distance Learning at USG Institutions*

This research outlines the current status of USG institutions that have identified departments tasked with online course accessibility, and resources for training staff and faculty in issues of online course accessibility.

## **COLUMBUS ROOM/TABLE 2**

Lead Presenter: **Katherine Holbrook**

Mentor: Dr. Michelle Folta  
Music  
Georgia Music Educators Association  
In-Service Conference Poster Session

*Accessibility of Visual Aids in the General Music Classroom*

This poster discusses the importance of visual aids in the general music classroom and how accessibility to such materials is achieved for students with disabilities, students in poverty, and culturally-diverse students.

# POSTER SESSIONS

## **COLUMBUS ROOM/TABLE 3**

Lead Presenter: **Caroline Murphy**

Mentors: Dr. Daniel Holt and Dr. Julie Ballenger

Biology

### *Baskets of Culture*

The method of basket weaving in Red Bay on Andros Island is unlike any other in the Bahamas as it is derived from African techniques. The rich culture surrounding the area has made its mark on the people and their products.

## **COLUMBUS ROOM/TABLE 4**

Lead Presenter: **ZiJie Lin**

Co-Presenters: **Jaleesa DeJesus, Rhiana Flowers, Brooke Thomson, Alexis Warthen, and Nicholas Wilson**

Mentors: Dr. Kevin Burgess and

Samantha Worthy, Graduate Student, University of Maryland

Biology

### *DNA Barcoding and Ecological Studies of Plant Species in Ecuador*

A summary of the Burgess Lab's DNA barcoding projects and ecological studies of plant species in Ecuador. A total of five sections will be included to display the progress of each aspect of the project.

## **COLUMBUS ROOM/TABLE 5**

Lead Presenter: **Sara Lowery**

Co-Presenter: **Lonnie Morris**

Mentors: Dr. Rosa Williams and Mr. Michael Johnson

Earth & Space Science

### *Current Progress of the Small Radio Telescope (SRT) at the Coca-Cola Space Science Center*

The Small Radio Telescope (SRT) was modeled and constructed after the SRT at the MIT Haystack Observatory. Previously, the telescope resided on top of Lenoir Hall; however, it was transported to the Coca-Cola Space Science Center (CCSSC), for the purpose of furthering future research goals.

# POSTER SESSIONS

## **COLUMBUS ROOM/TABLE 6**

Lead Presenter: **Ross Hodge**

Co-Presenters: **Dalton Batastini, Nathan Sandberg  
and Bradley Lloyd**

Mentors: Dr. Shawn Cruzen and Mr. Michael Johnson  
Earth & Space Science

*Development of a Micro Satellite Technology Testing Platform at  
Columbus State University's Coca-Cola Space Science Center*

Students at the CCSSC are currently developing a Micro Satellite Technology Testing Platform (MiSTT), in order to move forward in the process of developing launching and support of cube sat missions.

## **COLUMBUS ROOM/TABLE 7**

Lead Presenter: **Brendon O'Keeffe**

Mentors: Professor Michael Johnson  
and Dr. Rosa Williams  
Earth & Space Science

*Watching Stars Grow: The adaptation and creation of instructional material for the acquisition, reduction, and analysis of data using photometry tools at the WestRock Observatory.*

The adaptation and creation of instructional material for the acquisition, reduction, and analysis of data using photometry tools at the WestRock Observatory.

## **COLUMBUS ROOM/TABLE 8**

Lead Presenter: **Allison Stallworth**

Co-Presenter: **Emma McPeters**

Mentor: Dr. Diana Riser  
Psychology

*Relations between Measures of Media Consumption  
and Fat Phobia*

This study sought to determine whether media consumption is predictive of fat phobia as operationalized by negative stereotypes about fat people, internalized weight stigma, and anti-fat bias.

# POSTER SESSIONS

## **COLUMBUS ROOM/TABLE 9**

Lead Presenter: **Meenal Joshi**

Co-Presenters: **Drew Fidler and JeAsian Bailey**

Mentor: Dr. Lauren Kling

Biology

*Hypertension, Diabetes, and Heart Disease in the Bahamas vs. United States and the medications used to help control these diseases*

This group examined and compared the rates of Hypertension, Diabetes, and Heart Disease in America and the Bahamas. They also studied Bush Medicine in the Bahamas and “artificial” medicine in America. They compared the results of the medications used to control these diseases and their effects on the mortality rates.

## **COLUMBUS ROOM/TABLE 10**

Lead Presenter: **Abby Grace Moore**

Mentors: Dr. Julie Ballenger and Dr. Daniel Holt

Biology

*Medicinal Plants and Herbs of Andros Island, Bahamas*

The effect of local bush medicine plants on Bahamian culture and people on Andros Island was determined through analyzing plant identity, medicinal uses, and the community dependency.

## **COLUMBUS ROOM/TABLE 11**

Lead Presenter: **Persia Tillman**

Mentor: Dr. Michael Newbrey

Biology

Association of Southeastern Biologists

*Comparison of age and growth biology of 34 million year old sting-rays from North Dakota to the extant *Dasyatis pastinaca**

This research highlights the age and growth patterns of an ancient, unknown species of stingray. Fellow researchers and myself hypothesize that the age and growth patterns of modern species do not correlate to that of this ancient species due to the fact that the earth's climate has since changed dramatically.

# POSTER SESSIONS

## **COLUMBUS ROOM/TABLE 12**

Lead Presenter: **Gabriel Hart**

Co-Presenters: **Valerie Parker, Sabrina Rodgers  
and Emma McCabe**

Mentor: Professor Danielle Cook

*Abercrombie (1RU61): Archaeological Salvage from Russell County, Alabama*

This project explores the archeological salvage (i.e. human remains, burial goods, and other various artifacts) that was first unearthed in Russell County, Alabama in the late 1700's. The Abercrombie collection (1RU61) made its way to Columbus State in 2016 and is currently being professionally sorted through for the sixth time.

## **COLUMBUS ROOM/TABLE 13**

Lead Presenter: **Jack Hovey**

Mentor: Dr. Stacey Sloan Blersch

Earth & Space Science

*Evaluating Detritus Decomposition Rates of Abandoned Pit Mines at CSU Oxbow Meadows Environmental Learning Center*

Comparing organic carbon decomposition rates of impaired ponds and a natural reference site – a remnant oxbow lake of the Chattahoochee River.

## **COLUMBUS ROOM/TABLE 14**

Lead Presenters: **Sydney Barker and Caroline Humphries**

Mentor: Dr. Stacey Blersch

Earth & Space Science

*Biological index of tolerance and macroinvertebrate richness to assess ecological structure and function of abandoned mine ponds at CSU Oxbow Environmental Learning Center*

Macroinvertebrates were sampled from shallow wetlands sites in four ponds. Samples were taken back to the lab and identified taxonomically down to the family level. Tolerance in relation to family was identified, and species richness of each wetland site was calculated. From these measurements, an index of biological integrity was determined and compared to a reference condition, a remnant oxbow lake.

# POSTER SESSIONS

## **COLUMBUS ROOM/TABLE 15**

Lead Presenter: **Justice Elijah**

Mentor: Dr. Sarah Bowman

History & Geography

*The Life and Work of Henry McNeal Turner During Reconstruction*

This poster will provide the context necessary for understanding Turner's viewpoints in politics and religion, as well as examine the life of Reverend Henry McNeal Turner, his speeches, and his role within the African American community after the Civil War.

## **COLUMBUS ROOM/TABLE 16**

Lead Presenter: **Jared Bies**

Mentor: Dr. Jonathan Meyers

Chemistry

*Mechanism of Triazolium Salts on Breast Cancer Cells*

This project include the determination of the octanol/water partition coefficients for the five novel triazolium salt derivatives that were synthesized by a fellow colleague. The partition coefficient of drugs is important as it gives useful information on its potential effectiveness against cancerous cells.

## **COLUMBUS ROOM/TABLE 17**

Lead Presenter: **Amanda Cruz**

Mentor: Dr. Lauren King

Biology

*How the Potcakes of Andros Compare to the Dogs of the U.S.*

This project consists of a comparison between the dogs found on Andros Island, Bahamas and the K-9's found in Columbus, Ga. This comparison will show the difference in health and social stigma.

# POSTER SESSIONS

## **COLUMBUS ROOM/TABLE 18**

Lead Presenter: **McKenna Arnold**

Mentors: Dr. Joy Thomas and Dr. Grant Scarborough  
Health & Physical Education and Exercise Science

*Diabetes Disparities in Chattahoochee Valley: An analysis of Quality of Care*

The purpose of this study is to improve MercyMed's overall quality of care by analyzing exactly how we are addressing health problems when they arise and whether or not we are bringing down barriers to healthcare for the low income in our community.

## **COLUMBUS ROOM/TABLE 19**

Lead Presenter: **Nathan Sandberg**

Co-Presenter: **Kristopher Fitch**

Mentors: Dr. Rosa Williams and  
Michael Johnson  
Earth & Space Science

*Data Collection and Comparison at the WestRock Observatory*

The WestRock Observatory, at Columbus State University's Coca-Cola Space Science Center, is currently calibrating and verifying data collected at the observatory by comparing it with published scientific observations.

## **COLUMBUS ROOM/TABLE 20**

Lead Presenter: **Kristopher Fitch**

Co-Presenters: **Sarah Lowery and Lonnie Morris**

Mentor: Professor Michael Johnson  
Earth & Space Science

*3D Navigation with Microsatellites*

3D Navigation for microsatellites using LiDAR technology. LiDAR stands for laser imaging, detection, and ranging, which uses a laser in place of radio waves in the tradition RADAR. The laser is able to produce a 3d scan of its surroundings and relay it in real time.

# POSTER SESSIONS

## **COLUMBUS ROOM/TABLE 21**

Lead Presenter: **Valencia Coleman**

Mentor: Dr. Rania Hodhod

Computer Science

GURC 2016, ACM Mid-Southeast 2016-2017, GCHC

GURC 2016- Best Science Paper

*CompuTrain: Using Educational Games to Teach Computational Thinking Skills*

CompuTrain is an augmented reality educational game to teach computational thinking skills to young children. The game is aimed to be used in the classroom for middle schools in the local community. CompuTrain is an augmented reality educational game to teach computational thinking skills to young children.

## **COLUMBUS ROOM/TABLE 22**

Lead Presenter: **Malina Rollins**

Co-Presenter: **Jeremy Belt**

Mentors: Dr. Michael Newbrey and Dr. Elizabeth Klar

Biology

*Otoliths versus Centra*

Otoliths versus centra: comparing number of annuli in age registering structures of *Micropterus salmoides*  
Studies of age and growth provide information about fish population structure, sexual maturity, growth rate, longevity, and mortality, which should be known for proper conservation and management.

## **COLUMBUS ROOM/TABLE 23**

Lead Presenter: **Anju Shajan**

Mentor: Dr. Uma Sridharan

Accounting

*Applying Accounting Information Systems Concepts to the Movie "Out of Time"*

Applying accounting information systems and Business Process Modeling Notation to track the flow of cash in the movie "Out of Time." The project will highlight and identify controls needed within a law enforcement organization.

# POSTER SESSIONS

## **COLUMBUS ROOM/TABLE 24**

Lead Presenter: **Stacy Hults**

Co-Presenters: **Ivy Do, Bradley Lloyd and Lonnie Morris III**

Mentors: Dr. Rosa Williams and  
Professor Michael Johnson  
Earth & Space Science

*Solar Observation at The WestRock Observatory*  
*This presentation covers the solar observation at the WestRock Observatory.*

The WestRock Observatory in Columbus State University's Coca-Cola Space Science Center began solar observations in 2001. Since then the observatory has made many upgrades in equipment. These upgrades include new telescopes, new cameras, various other upgrades to hardware and software that afford much better solar observations.

## **DAVIDSON LOUNGE TABLE 1**

Lead Presenter: **Ashley Clark**

Co-Presenter: **Jordyn Braaten**

Mentor: Professor Hannah Israel  
Art

*Childs's Play*

Child's Play is a short stop motion film that depicts the events of a young girl's life in a fantasy world. This film is the result of an experiment with stop motion, created by young adults with no prior knowledge in the art of stop motion film.

# POSTER SESSIONS

## **DAVIDSON LOUNGE TABLE 2**

Lead Presenter: **Jesse Hunt**

Co-Presenters: **Brittany Monreal, Kendra Henthorn  
and Caroline Murphy**

Mentors: Dr. Julie Ballenger and Dr. Daniel Holt  
Biology

*The effects of environmental conditions on species  
distribution of nerites in the tidal zones on Andros Island, Bahamas.*

The most common nerites on Andros Island are the four-toothed, blood-tooth, and checkered nerites. We will investigate if species distribution is correlated with tidal zones, dissolved O<sub>2</sub>, temperature, and salinity in the tidal pools on Andros. We hypothesize that each nerite species will prefer a certain set of conditions.

## **DAVIDSON LOUNGE TABLE 3**

Lead Presenter: **John Spencer**

Co-Presenters: **Jimmy Cisneros, Nina Rollins  
and Chikodinaka Okiyie**

Mentors: Dr. Julie Ballenger and Dr. Daniel Holt  
Biology

*Competition of nerite species found in Andros, Bahamas due to  
zonation in coastal tidal pools*

Competition will be measured in nerite species by observing size and placement. Andros island is the largest land mass in the Bahamas. It's ecology is diverse, with plants and animal species each taking part in the utilization of resources.

## **DAVIDSON LOUNGE TABLE 4**

Lead Presenter: **Carlton Jonica**

Mentor: Dr. Brandt Smith  
Psychology

*Shades of Good Character*

This display will include research on altruism, pro-social behavior and social value orientation.

# POSTER SESSIONS

## **DAVIDSON LOUNGE TABLE 5**

Lead Presenter: **Bobbie Bannerman**

Mentor: Dr. Cindy Ticknor

Mathematics & Philosophy

*My Chinese Experience*

This presentation illustrates a journey and experience of a western foreigner in an Eastern Country.

## **DAVIDSON LOUNGE TABLE 6**

Lead Presenter: **Chance Seckinger**

Co-Presenters: **Emma McCabe, Gabriel Hart, Michaela Mallett, Sabrina Rodgers and Valerie Parker**

Mentor: Professor Danielle Neale

Earth & Space Science

An Archaeological Approach to the Abercrombie Mound Remains (1RU61), Russel County, Alabama

After a review of literature, maps, notes, and archaeological remains, we can more accurately describe the Abercrombie Mound of Russel County, Alabama. This gives us a better understanding of Native American history in the lower Chattahoochee Valley.

## **DAVIDSON LOUNGE TABLE 7**

Lead Presenter: **Chance Seckinger**

Mentor: Dr. Diana Ortega-Ariza

Earth & Space Science

*Porosity and Permeability of Miocene (Puerto Rico), Pennsylvanian (Kansas), and Mississippian (Alabama) Carbonate Rocks*

After a review of previous research and analysis under thin section, this ongoing research can more accurately describe the porosity and permeability trends of Miocene, Pennsylvanian, and Mississippian carbonate rocks. These petrophysical characteristics are important because porosity and permeability of carbonates are key factors in their role as hydrocarbon reservoirs.

# We Solve It POSTER SESSIONS

## DAVIDSON LOUNGE TABLE 8

### ***Cyber Shield***

By Chloe Smith, Tyler Allen, and Alexis Stanley  
Professor: Dr. John Hupp

Spread knowledge and information on how to protect the information for at-risk teens involved in the program and to spread awareness on how to protect sensitive digital information

## DAVIDSON LOUNGE TABLE 9

### ***The Roses' of Guinea***

By Eliza Wright  
Professor: Dr. Fady Mansour

Inequality for women in the country of Guinea

## DAVIDSON LOUNGE TABLE 10

### ***Not one more***

By Peter Keres  
Professor: Dr. Lydia Ray

Gun violence

## DAVIDSON LOUNGE TABLE 11

### ***We Solve It***

By Elizabeth Flowers, Max Einig, Alexander Forde,  
Jessica Phelps, Brandon Wuenall  
Professor: Dr. Fady Mansour

We wish to propose solutions to Somalia's government in the form of decreasing poverty, expanding democracy, improve governance, and achieve a higher and steady economic growth.

## DAVIDSON LOUNGE TABLE 12

### ***Socially Anxious?***

By Elijah Neundorfer  
Professor: Dr. Stephanie da Silva

How to mitigate both the causes and effects of social anxiety in college students.

# We Solve It POSTER SESSIONS

## **DAVIDSON LOUNGE TABLE 13**

### ***The Nation of Festivals***

By Joslyn Ellis, Zoya Johnson, and Bryndon Clarke  
Professor: Dr. Fady Mansour

The economic advancements in the Ethiopian economy from 2016-2021

## **DAVIDSON LOUNGE TABLE 14**

### ***A Digital Shield***

By Allen Tyler (my name), Chloe Smith, Alexis Stanley  
Professor: Dr. John Hupp

Exploitation of the online information of at-risk teenagers

## **DAVIDSON LOUNGE TABLE 15**

### ***Developing an intelligent tool to assist with creating a Cybersecurity curriculum***

By Ahmed Mostafa  
Professor: Dr. Rania Hodhod

The real world problem is the lack of Cybersecurity experts who can design Cybersecurity courses for schools and colleges. The project aims to develop an intelligent tool that can assist novice Cybersecurity instructors create sound cybersecurity curricula and training programs. The tool allows the instructor to build a Cybersecurity course compliant with the NICE Framework. The tool guides the instructor while building the course and provide feedback on the overall course design.

## **DAVIDSON LOUNGE TABLE 16**

### ***Rising from Corruption***

By Drake Davis, William Harper, Jacob DeClue,  
Emmanuel Reeves, Ronnie Hill  
Professor: Dr. Fady Mansour

Corruption and economic downfall in Venezuela

# We Solve It

## POSTER SESSIONS

### **DAVIDSON LOUNGE TABLE 17**

#### ***ASD Serious Game***

By Daniel Rockwell

Professor: Dr. Rania Hodhod

Increasing social skills for students with ASD at the college level.

### **DAVIDSON LOUNGE TABLE 18**

#### ***Pump up the economy***

By John Iziken

Professor: Dr. Fady Mansour

Decreasing poverty and improve economic growth in African Countries.

### **DAVIDSON LOUNGE TABLE 19**

#### ***Chick-Fil-A : Is It really Express.***

By Deja Dalton, Daija Staten, Dacarri Grant,  
and Jonathan Gunn

Professor: Dr. Tesa Leonce

Trying to improve Chick-fil-A Express on campus to make lines go by quicker.

### **DAVIDSON LOUNGE TABLE 20**

#### ***Chile QEP Project***

By Will Norris and Canenna Butler

Professor: Dr. Fady Mansour

The economic issues in Chile.

### **DAVIDSON LOUNGE TABLE 21**

#### ***Helping Women, One Period at a Time***

By Jazmin Rush, Chasity Luke, Vivian Duncan,  
Joanne Youngblood, Canelius Turner

Professor: Dr. Nathan Combes

The lack of access to feminine hygiene products for homeless and poor women.

# We Solve It

## POSTER SESSIONS

### **DAVIDSON LOUNGE TABLE 22**

#### ***Hitting the brick wall of optimism with the sledgehammer of impossibility***

By Robert Wright, Jessica Moody

Professor: Dr. Stephanie Da Silva

To understand how to better spend mental resources when a task is impossible, and how to better take on alternatives through disengaging from the impossible.

### **DAVIDSON LOUNGE TABLE 23**

#### ***Revisiting the Ascent of Man, an Explicit Bias Measure***

By Robert Wright, Alexandria Valentini, James Hicks

Professor: Dr. Diana Riser

To better address racism by understanding what types of authoritarian and dominance-oriented traits are contributors to racist attitudes.

### **DAVIDSON LOUNGE TABLE 24**

#### ***Change Agents Activated***

By Mehkya Wilcox, Theori Henry, Isabella Leblanc, and Ryan Smith

Professor: Dr. Fady Mansour

How to fix the problem or help the improvement of Cuba's command economy since the forces of supply and demand are unable to work there since the government controls all the property and sets the prices.



**PANEL  
SESSIONS**

# PANEL SESSIONS

DAVIDSON 258  
PANEL SESSION 1  
1:00 - 2:20

Lead Presenter: **Veronica Reynolds**  
Co-Presenters: **Joslin Buckner, Modupe Banjoh  
and Dionysia Ross**

Mentor: Dr. Cheryl Smith  
School of Nursing

*Positive Aspect of Breastfeeding for Mother & Newborn*

A review of current literature shows that breastmilk is an essential source to fight off communicable diseases throughout childhood. The early initiation of breastmilk to an infant reduces recurrence of infections and improves patient outcomes.

Lead Presenter: **Hunter Bowling**  
Co-Presenters: **Morgan Barton, Sumer Culberson,  
Tori Hood, and Mary Poole**

Dr. Cheryl Smith  
School of Nursing

*Avocation for Early Post-Caesarean Kangaroo Care*

Early initiation of skin-to-skin contact - termed, "kangaroo care" - between a newborn and their mother provides benefits to both parties. Although not the standard procedure yet, evidence has been uncovered to support this practice following caesarean births.

Lead Presenter: **Tyler Sheffel**  
Co-Presenters: **McKenzie Fagioli, Karen Norton, Dorothee Cross,  
Angel Whitley, and Daniela Martinez-Rodriguez**

Mentors: Dr. Cheryl Smith and Dr. Gail Jones  
School of Nursing

*Modifiable Risk Factors of Preterm Labor*

Senior students in the Columbus State University School of Nursing presenting an Evidence Based Practice project on what all women can do to decrease their risk of going into preterm labor, which is defined as labor that begins before 37 week gestation.

Lead Presenter: **Cassidy Partain**  
Co-Presenters: **Devyn Sizemore, Casey Marshall,  
Michael Stone, Mindy Williams, and Gail Peck**

Mentor: Dr. Cheryl Smith  
School of Nursing  
Medical Center Hospital

*Management of Pregnancy Beyond Full-Term*

A review of literature was conducted and found that elective induction before 42 weeks helps prevent post-term pregnancy complications.

# PANEL SESSIONS

DAVIDSON 258  
PANEL SESSION 2  
2:20 - 3:20

Lead Presenter: **Megan Harris**

Co-Presenters: **Christin Slocumb, Kayla McNair,  
Nadine Boakye, and Soo Kyoung Kim**

Mentor: Dr. Gail Jones

School of Nursing

*Saving Lives by Preventing Medication Errors*

Preventing medical errors by pointing out specific discrepancies during administration of medications both at home and in hospitals. Giving examples of better patient teaching and medication reconciliation.

Lead Presenter: **Tia Montoto**

Co-Presenters: **Noreen Gordon, Chelsea Felix  
and Sasha Hernandez**

Mentor: Dr. Cheryl Smith

School of Nursing

*The Use of Complementary and Alternative Medicine  
(CAM) to Manage Chemotherapy Side Effects*

The effect of complementary and alternative medicine on chemotherapy-induced side effects in oncology patients.

Lead Presenter: **Robert Shreve**

Co-Presenter: **Christopher Murphy, Nikki Kenyon,  
Bethany Degollado, and Emily Christein**

Mentor: Dr. Cheryl Smith

School of Nursing

*The Effectiveness and Risks of HPV Vaccination*

Compilation of current literature was reviewed to identify evidence-based recommendations regarding the benefits of the human papillomavirus vaccine and risks of not vaccinating.

# PANEL SESSIONS

DAVIDSON 258  
PANEL SESSION 3  
3:20 - 4:20

Lead Presenter: **Kayla Tew**

Co-Presenters: **English Guthrie, Aaren Aut,  
Kinsey Stovall, and Laney Wilson**

Mentor: Dr. Cheryl Smith

School of Nursing

*Reducing Sentinel Events in Surgical Patients*

A sentinel event is an adverse event that occurs in an operative setting that is avoidable if appropriate preventable measures are taken. Evidence shows that following a pre-surgical checklist has significantly reduced the occurrence of mortality rates and complications related to adverse events in surgical patients.

Lead Presenter: **Addison Frasch**

Co-Presenters: **Trishina Lewis, Olivia Henderson,  
Mindy Hightower, Tracy Meyer, Ruth Stewart**

Mentor: Dr. Gail Jones

School of Nursing

*Decreasing Suicide in Adolescence in a School Setting*

Statistics show that one out of six high school students consider suicide while one out of thirteen adolescents have attempted suicide. Examining research confirms that nurses play a vital role in identifying and decreasing the risk for suicide in adolescents. Nurses can bring awareness regarding suicide in a school setting.

Lead Presenter: **Alexys Lawrence**

Co-Presenters: **Amber Johnson, Arica Robinson, Mohini Patel,  
Staria Quarshie, and Mary Bankole**

Mentors: Dr. Gail Jones and Dr. Cheryl Smith

School of Nursing

*Violence Against Emergency Department  
Nurses in the Workplace*

Workplace violence is prevalent in many areas of healthcare, specifically towards nurses in the emergency department. This type of workplace violence decreases productivity, increases stress, and decreases longevity of nurses who work in the department. Research shows that early intervention against violence is key to providing a safe working environment.

# PANEL SESSIONS

DAVIDSON 256  
PANEL SESSION 1  
1:00 - 2:00

Lead Presenter: **Madison Sauls**

Co-Presenters: **Abby Blair, Shelby Rolling,**

**Brittany Spiering, Caroline Weed, and Janai Yelverton**

Mentor: Dr. Cheryl Smith

School of Nursing

*Opioid Abuse*

Opioid addiction has caused an epidemic across our country, negatively impacting communities, healthcare systems, and economies around the world. Registered nurses can play a role in fighting this epidemic through identifying opioid abusers and providing education to patients that are prescribed opioids.

Lead Presenter: **Charles Brand**

Co-Presenters: **Melissa Acton, Gregory Carlisle,**

**James Conley, and William Woodward**

Mentor: Dr. Cheryl Smith

School of Nursing

*Long-Term Opiate Addiction Treatment*

When treating opioid addiction Buprenorphine is more effective, reduces risk for overdose, and is more cost-effective than Methadone. Patients that take Buprenorphine rather than Methadone are more likely to stop illicit drug use.

Lead Presenters: **Melissa Wells**

Co-Presenters: **Katherine Alito, Jessica Burns,**

**Quinten Rogers, Laney Patterson, and Zach Roving**

Mentors: Dr. Cheryl Smith and Dr. Gail Jones

School of Nursing

*Changing the Outcome of Opioid Overdose*

The community is trying to fight the opioid overdose rates using over the counter Narcan. The presentation includes where to find Narcan, statistics supporting its success rates and a visual presentation on how to use the drug in an emergency situation.

# PANEL SESSIONS

DAVIDSON 256  
PANEL SESSION 2  
2:00 - 3:00

Lead Presenter: **Christopher Lockhart**

Co-Presenters: **Jacob Worthington and Rebecca Green**

Mentor: Dr. Jianhua Yang

Computer Science

*The Study of Character Distribution in an Encrypted TCP Session*

The purpose of the project is to advance thumbprint development by studying the frequency and distribution of characters in encrypted SSH sessions to determine if any relation can be made between plaintext and encrypted characters.

Lead Presenter: **Eduardo Medina**

Co-Presenters: **Benjamin Sullivan and Ulysses Holman**

Mentor: Dr. Jianhua Yang

Computer Science

*Using Time Thumbprint to detect stepping-stone intrusion*

This project contains research into the use of time thumbprints to detect intruders that are using computer hosts as stepping stones to attack online victims while avoiding detection.

Lead Presenter: **Duane Hawkins**

Co-Presenter: **Khalil Harris and Jessica Butenhof**

Mentor: Dr. Jianhua Yang

Computer Science

*Intrusion Detection Using System Calls*

Intrusion detection systems are used to detect normal and abnormal behavior in a system. The abnormal behavior is then flagged and used to determine if an intrusion of the system has taken place. This project investigates the intrusion detection system by observing the sequence of system calls and looking for any anomalous behavior.

# PANEL SESSIONS

DAVIDSON 256  
PANEL SESSION 3  
3:00 - 4:00

Lead Presenter: **John Spencer**

Mentor: Dr. Lauren King

Biology

Association of Southeastern Biologists Conference

*The Effects of Antimicrobial Peptides WAM-1 and LL-37 on Multidrug Resistant Acinetobacter baumannii*

*Acinetobacter baumannii*, a multidrug resistant bacteria responsible for a number of hospital-acquired infections, has become an increasing concern to clinicians due to the limited number of therapeutic options to treat it. The goal of this project was to elucidate the effects of antimicrobial peptides WAM-1 and LL-37 on strains of *A. baumannii*.

Lead Presenter: **Abby Grace Moore**

Co-Presenters: **Ashley Murphy, Jaleesa DeJesus and Jack Hovey**

Mentor: Dr. Julie Ballenger and Dr. Daniel Holt

Biology

*The Distribution and Host Preference of Cassytha filiformis (Love Vine) of Andros Island, Bahamas*

In this experiment, the distribution, host preference, and light requirements of *Cassytha filiformis* (Love Vine) were conducted and analyzed in Andros Island of the Bahamas.

Lead Presenter: **Gabriel Bello**

Mentor: Dr. Yesem Kurt Peker

Computer Science

*A Bluetooth LE Security Investigation*

In this project, we analyze the architecture and security features available to Bluetooth LE developers and observe the network traffic of LE devices to analyze their security features.

# PANEL SESSIONS

DAVIDSON 254  
PANEL SESSION 1  
1:00 - 2:00

Lead Presenter: **Natasha Jenkins**  
Co-Presenter: **Dr. Jennifer Newbrey**  
Mentor: Dr. Kathleen Hughes  
Biology

## *The Effect of Imidacloprid on Crayfish Nerve Activity*

Crayfish are a keystone species; their daily activities impact aquatic ecosystems. Crayfish are important for environmental biodiversity and ecology (Brian Helms et. al (2013). Studies have shown that crayfish heavily depend on their antennae for sensory input, to test their environment's water quality and pressure (Reynolds and Souty-Grosset 2012).

Lead Presenter: **Frances Woolfolk**  
Mentors: Dr. Michael Newbrey and Dr. Hugo Martin Abad  
Biology

## Association of Southeastern Biologists Annual Meeting *Comparison of age-registering structures in coelacanth*

Despite little research done on the critically endangered species, age and growth of coelacanth has been a long topic of debate for accurate age assignments of individuals. In this presentation, we provide a new interpretation of age-registering structures.

Lead Presenter: **ZiJie Lin**  
Mentors: Dr. Kerri Taylor, Dr. Jonathan Meyers, and Dr. Monica Frazier  
Chemistry

## *Synthesis, characterization, and biological activities of N,N'-bis-substituted 1,2,4-triazolium salts with various substituents*

A series of N,N'-bis-substituted triazolium salts has been synthesized, characterized, and tested for biological activities such as solubility and anti-proliferative activities against select lines of human cancer cell lines.

# PANEL SESSIONS

DAVIDSON 254  
PANEL SESSION 2  
2:00 - 3:00

Lead Presenter: **Bao Do**

Co-Presenter: **Christopher Sinkule**

Mentor: Dr. Carlos Almada

Mathematics & Philosophy

*Spectral Theory of Ordinary Differential Operators*

This project is aimed to study spectral theory of ordinary differential operators and the relationship between the method of expansion in eigen functions and the Green's function method in solving second order ordinary differential equations with boundary conditions.

Lead Presenter: **Bobbie Bannerman**

Mentors: Dr. Robin L. Snipes and Dr. Phillip C. Bryant

Management

Georgia Collegiate Honors Council Annual

Conference in Macon, Georgia

*Cross-Generational Effects of Workplace Spirituality on Job and Life Satisfaction*

This research tested the hypothesis that the positive effects of workplace spirituality on both job and life satisfaction are experienced differently among Millennials as compared to older generations. In a survey of 224 participants, we found that the impact of workplace spirituality is stronger for Millennials on at least one facet of job satisfaction compared to older generations.

Lead Presenter: **Loran Shaver**

Mentor: Professor Hillary Fleenor

Computer Science

ACM Mid-Southeast

*ConceptNet Extender & Explorer:*

*A Better Way Of Interacting With ConceptNet*

ConceptNet is a semantic network that can be useful for natural language processing. Its use, however, can be impeded by unwieldy, poorly documented API. This project serves as an interface with ConceptNet, to allow easier, quicker utilization of ConceptNet.

# PANEL SESSIONS

DAVIDSON 254  
PANEL SESSION 3  
3:00 - 3:30

## ***Crossing Cultures & Careers: The United Kingdom & United States***

Mentor: Dr. Cindy Ticknor  
Honors College

This faculty organized panel will consist of students who explored cultural differences between the United Kingdom and the United States by asking a research question related to their major or career path. Each of the five panelists will provide a brief review of related literature on the topic and a reflective summary of commonalities and differences of the two cultures that was informed by interviewing individuals from both countries and visiting key sites in the United Kingdom.

Presenters include:

*Pharmacy: Similarities and Differences Between the United States and England*  
by **Tehgan Anguilm**

This exploration of pharmacy practice reveals differences in education, practice and terminology learned through background research and interviews with pharmacists and their clients.

*The Role of Entrepreneurship*  
by **Madeline Goodfellow**

An examination of entrepreneurship of Maxwell Kohl and Harry Selfridge is coupled with interviews of a local entrepreneur, Mak Son, and a site visit of the famous department store Selfridges & Company.

*Comparing the Ethics of Animal Testing*  
by **Kimberly May**

The ethics and policies on animal testing vary between the United Kingdom and the United States, from the treatment of laboratory animals to the breeding of genetically altered animals. The differences are explored along with the perceptions of American and English students on the ethical treatment of animals.

*The Culture Impact of Harry Potter*  
by **Camille Atkins**

This presentation examines the cultural impact of the Harry Potter series, especially on film and literature, and analyzes how the British culture shaped J. K. Rowling's story writing.

*The Development of Harrods Department Store*  
by **Angel Gray**

A look into the history of Harrods and the entrepreneurship of Charles Henry Harrod juxtaposed with expertise from a Turner College of Business professor give us a look at entrepreneurship in England and America.

# PANEL SESSIONS

DAVIDSON 254  
PANEL SESSION 4  
3:30 - 4:30

Lead Presenter: **Zachary Lamb and Lauren Miley**

Co-Presenters: **Justin Briley**

Mentor: Professor Carey Scott Wilkerson

English

*A World Without Art*

A creative exploration, through fictional narratives, of the consequences for a world in which art is not valued and celebrated.

Lead Presenter: **Candice Tate**

Mentors: Dr. Rajeev Dabke and Dr. Cindy Ticknor

Chemistry

Georgia Collegiate Honor's Council Conference

Barry Goldwater Honorable Mention

*Three-Dimensionally Printed Models for Blind and Visually Impaired Chemistry Students*

Using Tinkercad, a browser-based 3D design and modeling tool, 3D-printed models were developed for blind or visually impaired students to use as learning tools in their introductory chemistry courses. We were able to gain insight into the use of three-dimensional tactile teaching tools in a non-sighted classroom.

Lead Presenter: **Abby Gibbons**

Dr. Sarah Bowman

History & Geography

*The Role of Photographic Portraiture in Cultural Demonstration: Memory in Columbus Families during the Late Nineteenth and Early Twentieth Centuries*

Photographs have played a role in society since the mid-nineteenth century. This project explores the ways in which portraiture use shifted between, the nineteenth and early twentieth centuries, moving from objects of conspicuous consumption to those of vernacular memory.

# PANEL SESSIONS

SCHUSTER 101  
PANEL SESSION 1  
1:00 - 2:00

Lead Presenter: **Vinhcent Vu**

Co-Presenters: **Muhammad-Kashif Lodhi  
and Brian Poole**

Mentor: Dr. Jianhua Yang

Computer Science

*Detecting Stepping-stone Intrusion via Packet Matching*

Most cyberattacks today involve the use of stepping-stone hosts, which are compromised hosts in between the victim and the attacker. Using packet matching, one can determine the length of a connection chain. By determining the length, one can determine whether the connection is malicious or not.

Lead Presenter: **Lisa Roy**

Co-Presenter: **Brian Lockerbie and Jermaine Clifford**

Mentor: Dr. Jianhua Yang

Computer Science

*Using Packet Thumbprint to Detect Stepping-Stone Intrusion*

Using stepping stones is a widely-used technique that hackers use to hide their identity. The hackers do not use their own computers for malintent, but from intermediary computers that have been compromised by the attacker. One way to identify a stepping-stone intruder is using the packet content thumbprint.

# PANEL SESSIONS

SCHUSTER 101  
PANEL SESSION 2  
2:00 - 3:00

Lead Presenter: **Andrew Lesh**

Co-Presenter: **Brian Lockerbie and Kendrick Gholston**

Mentors: Dr. Jianhua Yang, Dr. Lixin Wang and  
Dr. Aurelia Smith

Computer Science

Filtering Captured Packets to Detect Stepping  
Stone Intrusion

Venture into the selection process of captured packets to aid in stepping-stone intrusion detection and the interface implementing it and a brief description of WinPcap and the C# wrapper, Pcap.NET.

Lead Presenter: **Kendrick Gholston**

Co-Presenters: **Andrew Lesh and Brian Lockerbie**

Mentors: Dr. Jianhua Yang, Dr. Lixin Wang  
and Dr. Aurelia Smith

Computer Science

Multithreading to Determine Stepping Stone Intrusion

To aid in students' comprehension and study of cybersecurity, we developed an intrusion detection system to monitor for stepping stone usage. The system acts as a listener at a point in a chain of connections and collects all the data travelling in either direction. This presentation will cover the multithreading aspect of the program.

Lead Presenter: **Brian Lockerbie**

Co-Presenters: **Andrew Lesh and Kendrick Gholston**

Mentors: Dr. Jianhua Yang, Dr. Lixin Wang,  
and Dr. Aurelia Smith

Computer Science

*GUI and Ease of Use for Stepping-Stone Intrusion Detection*

The goal is to easily demonstrate the process of stepping-stone intrusion detection. We found it most pertinent to design a user interface that was intuitive, simple to follow, and difficult (if not impossible) to mismanage.

# PANEL SESSIONS

SCHUSTER 101  
PANEL SESSION 3  
3:00 - 3:40

Lead Presenter: **Abby Gibbons**

Mentor: Dr. Ryan Lynch

History & Geography

*Silent Cities: Sensationalism and Removed Populations within Fourteenth Century Western Christian and Muslim Travel Accounts of Baghdad and Jerusalem*

This research uses four travel texts to explore the creation of “silent cities” in Western Christian and Muslim accounts of Baghdad and Jerusalem. The study asserts that both confessional identities contributed to a fourteenth century paradigm that omitted discussions of populations to maintain cultural fantasies associated with the East.

Lead Presenter: **Matthias Smith**

Mentor: Dr. Ryan Lynch

History & Geography

SRACE Grant; Columbus, GA

*The Mystery of the Red Tape: A Study of Nancy Drew in Film and Television 1937-1976.*

Investigative research into the film and television history of the popular Nancy Drew book series, utilizing unpublished archival records and contemporary industry publications.

# PANEL SESSIONS

SCHUSTER 130  
PANEL SESSION 1  
12:30 - 1:30

Presenters: **Jessie Barkhouse, Emma Baum, and Amy Crawford**

Mentors: Dr. Sarah Bowman and Laura Pate  
History Department and Honors College

*John Adams: The Forgotten President*

This presentation advocates for the legacy of John Adams to be memorialized. During his presidency, he faced challenges both at home with bipartisanship, and abroad. Through these adversities, he displayed boldness, dedication, honor, and a commitment to justice. Adams is, therefore, a president and founding father deserving of memorialization.

Presenters: **Jocelyn Canedo, Gabriel Bello, and Darby High**

Mentors: Dr. Sarah Bowman and Laura Pate  
History Department and Honors College

*Woodrow Wilson: A Man of Fortune and Misfortune*

This paper explores the leadership of Woodrow Wilson, by looking at his interactions with his contemporaries, decisions as they pertained to World War I, foreign policies, and domestic affairs, and his portrayal through pop culture throughout time with the intention of determining a monument in his honor.

Presenters: **Jacquelyn Dunton, Maryah Thompson, and Jane Mader**

Mentors: Dr. Sarah Bowman and Laura Pate  
History Department and Honors College

*Theodore Roosevelt*

This project explores former President Theodore Roosevelt and evaluates his character from three perspectives: historical, leadership, and memorial. Theodore Roosevelt has a special place in the history of the United States because of his strong-willed personality, his efforts in progressive reforms, and his ability as an influential leader.

# PANEL SESSIONS

SCHUSTER 130  
PANEL SESSION 2  
1:30 - 2:30

Presenters: **Genasis Jeziorski, Haley Karabasz,  
and Anju Shajan**

Mentors: Dr. Sarah Bowman and Laura Pate  
History Department and Honors College

*Presidential Perspectives: Jimmy Carter*

This presentation explores President Carter's leadership traits and style as a servant leader. It will explore his policy-making style and the drawbacks he faced due to his inconsistency and indecisiveness. Memorials have been dedicated to Carter in Georgia, emphasizing his broad smile. This presentation suggests a new kind of memorial that emphasizes his devotion to service.

Presenters: **Gabe Hart, Logan Ragan,  
and Valencia Coleman**

Mentors: Dr. Sarah Bowman and Laura Pate  
History Department and Honors College

*John F. Kennedy: An American Icon*

What are American presidents most remembered for? Their policies? Their personal lives? Their scandals? This paper explores the leadership, legacy, and lasting impacts that the 35th President of United States, John F. Kennedy, had on American politics and pop culture during his time in the oval office and beyond.

Presenters: **Meredith Donovan, Jodi Fraser,  
and Megan Higgins**

Mentors: Dr. Sarah Bowman and Laura Pate  
History Department and Honors College

*Lyndon B. Johnson: An Analysis of Leadership  
and the Presidency*

*This paper explores the leadership of President Lyndon Johnson by looking at his actions regarding Vietnam, the Great Society, and the Civil Rights Movement.*

# PANEL SESSIONS

## SAGE SESSIONS

### **Spring Annual Game Expo**

Mentor: Dr. Rodrigo Obando  
Computer Science

**1:30 - 2:30, Schuster 130**

**Valencia Coleman**, *The Art of Modeling and Animation: Using Blender to Create 3D Models*

**James Hicks**, *Game Level Design*

**Jorge Koifman**, *3D Modeling and UI Development*

**2:30 - 3:30, Davidson Auditorium**

**Allie McFarland**, *Making Maps for a Game*

**Tristan Porter**, *UI Development*

**Chandler Pruitt**, *On Being a Sound and Level Designer*

**3:30 - 4:50 Davidson Auditorium**

**Richard Rivera**, *Developing Stealth Game Artificial Intelligence*

**Parker Smith**, *Overview of Aftermath*

**Steven Vaughan**, *Shooting Phase and Store Interactions in Space Holes*

**Allen Woodall**, *Exploring Unity's Space and Filling in Space Holes*

# Awards

## **Oral Presentation Awards**

Award of Excellence  
Highest Recognition Award  
Best Recognition Award

The award recognizes undergraduate oral presentations characterized by excellence in research and clarity of delivery. Judges are composed of CSU Faculty and students.

## **Poster Presentation Awards**

Award of Excellence  
Highest Recognition Award  
Best Recognition Award

QEP We Solve IT Award

The award recognizes undergraduate poster presentations characterized by excellence in research and in clarity of design and presentation. Judges are composed of CSU Faculty and students.

## Tower Day 2018



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Tower Day is sponsored by CSU Academic Affairs, The CSU Provost office, QEP, CSU Student Activities Fee, CSU Research and Service Foundation and CSU Honors College.

Thank you to: CSU Tower Day committee, judges, volunteers, Dr. Markwood, Dr. Bordelon, and to all the CSU faculty and students who participated in 2018 Tower Day.