

### 2017 UNC Charlotte Undergraduate Research Conference

Friday, April 21, 2017

**Barnhardt Student Activity Center** 

**Conference Program** 



### Welcome

Welcome to the 2017 UNC Charlotte Undergraduate Research Conference (URC)! The URC continues to grow each year; thanks to your support. We have four formal sponsors for the conference: Atkins Library, Academic Affairs, the Honors College, and the Levine Scholars Program. Additionally, the URC receives generous support from all the University's colleges and many of the departments. With this support, we are able to include awards as part of the conference. This year we are happy to introduce a new category of awards for Community Engaged Research Projects. The Levine program and Honors College also have awards, which they present. A special thank you goes to the Charlotte Research Institute for their continued support of the Atkins Library Research Awards.

This year there are more than 260 students presenting research from 28 Departments representing all the Colleges within UNC Charlotte! There are almost as many faculty members participating in URC 2017 as research advisors, mentors, and judges. A big thank you to faculty for your continued service and dedication to the undergraduate students research and scholarship at UNC Charlotte.

Again, thank you to all the sponsors, the Colleges, and the Departments for their monetary support of the conference. I would especially like to recognize the conference organizing committee, the Atkins Library staff, the Levine Scholars, and the Bonner Leaders, all of whom played integral parts in the planning for today's event.

Most of all please join me in congratulating all of our Undergraduate Researchers for their hard work and efforts. Now engage in the conference presentations, take pictures, and be sure to use the #NinerURC17 to share your URC moments on social media.

Enjoy your day!

Dr. Erik Jon Byker Chair, Conference Organizing Committee

### **UNC Charlotte URC 2017 Organizing Committee**

Erik Byker, Chair; Reading and Elementary Education, Cato College of Education

Aba Ebong, Electrical and Computer Engineering, William States Lee College of Engineering

Betty Ladner, J. Murrey Atkins Library

Bruce LaMattina, Charlotte Research Institute

Cherese D. Childers-McKee, Honors College

Diane Zablotsky, Levine Scholars Program

Lanny Inabnit, Kinesiology, College of Health and Human Services

Malin Pereira, English and Executive Director of the Honors College

Sharon Reichard, J. Murrey Atkins Library

Tamara Johnson, Academic Planning and Analysis, Office of the Provost



#### **URC 2017 Schedule of Events**

#### Friday, April 21, 2017

**7:30 AM**: Registration opens in the James H. Barnhardt Student Activity Center (SAC)

Students and judges arrive to register. Set-up posters on available easels and the Salon rooms are open for students to set-up their PPT presentations. A light, continental style breakfast is provided.

#### 8:45 AM – 12:00 PM: Oral PPT Presentations

Judges and participants will follow the posted schedule and times for room assignments. Students must upload their presentation to their assigned rooms by 8:30 AM.

- Salon A: Biological Sciences
- Salon B: Health and Physical Sciences
- Salon C: Interdisciplinary and Social Sciences
- Salon D: Humanities
- Salon E: Applied and Statistical Sciences

**12:00 PM – 1:00 PM**: Spaghetti Luncheon for Judges and Morning Presenters in Salon E, sponsored

by the Honors College

#### 1:30 PM – 4:00 PM: Poster Presentations

Judging for posters opens at 1:30 PM. Posters open to the public at 2 PM. Students must be available next to their posters for the judging process. Participants are invited to enjoy refreshments as they view poster presentations. Judges should return their completed rubrics to the URC Registration table so that the scores can be tallied.

#### 4:00 PM - 5:00 PM: Awards Ceremony in Salons A and B

- Opening Remarks: Dr. Bruce LaMattina
- Panel Session with 2016 Atkins Award Winners: Moderated by Dr. Christopher Cameron with
- Presentation of Departmental & Community Engagement Awards: Dr. Erik Jon Byker
- Presentation of Sustainability Awards: Dr. Diane Zablotsky
- Presentation of Honors College Awards: Dr. Cherese Childers-McKee
- Presentation of Atkins Library Research Awards: Dr. Anne Cooper Moore, Dean of Atkins Library



### Salon A Oral Presentations 1: Biological Sciences

**8:45 AM:** Using High Throughput Screening to Identify Biological Pathways of Antineoplastic Drugs

Elivira An H

Faculty Advisor: Dr. Richard Chi, Department of Biological Sciences

**9:00 AM:** Inflammasome Activation in Endothelial Cells and Breast Cancer Madison Anderson **H** 

Faculty Advisor: Dr. Didier Dréau, Department of Biological Sciences

**9:15 AM**: Can Hydrogen Sulfide Protect against the Deleterious Effects of Microparticles in Vascular Endothelial Cells?

Megan Clontz H

Faculty Advisor: Dr. Mark Clemens, Department of Biological Sciences

**9:30 AM:** The Role of Neuropeptide Substance P in Microbe-Induced CNS Inflammation Ghallia Kaouk **H** 

Faculty Advisor: Dr. Ian Marriott, Department of Biological Sciences

**9:45 AM:** Mutations in Transporter RND-4 Confer Collateral Sensitivity in Burkholderia Multivorans Logan Kavanaugh **H** 

Faculty Advisor: Dr. Todd Steck, Department of Biological Sciences

**10:00 AM:** Characterization of Genes involved in Sex Determination within Nematostella Vectensis Mohd Hisyam Qumhiyeh **H** 

Faculty Advisor: Dr. Adam Reitzel, Department of Biological Sciences

10:15 AM: BREAK

**10:25 AM**: Ecological Functions of the Microbiome Associated with the Starlet Sea Anemone, Nematostella Vectensis

Victoria Sutherland **H** 

Faculty Advisor: Dr. Adam Reitzel, Department of Biological Sciences

**10:40 AM:** The effects of PolyDOTs on the Eastern Oyster, Crassotrea Virginica Daniel Smith **H** 

Faculty Advisor: Dr. Amy Ringwood, Department of Biological Sciences

**10:55 AM:** Genomic dissection of Flowering time and Maturity Date in Wild Soybean (Glycine soja) Victoria Bonnell **H**, **S** 

Faculty Advisor: Dr. Bao-Hua Song, Department of Biological Sciences



**11:10 AM:** Is there a Subspecies of Speyeria Diana (Diana Fritillary)? Arryn Munn **S** 

Faculty Advisor: Dr. Carrie Wells, Department of Biological Sciences

11:25 AM: Multiple Mechanisms Determine Resistance of Pancreatic Cancer Cells to Oncolytic Vesicular Stomatitis Virus

Gaith Droby
Faculty Advisor: Dr. Valery Grdzelishvili, Department of Biological Sciences

**11:40 AM:** Sex Moderates the Relationship between Emotion Regulation and Fetuin-A Hugo Silva

Faculty Advisor: Dr. Jeanette Bennett, Department of Psychological Sciences Additional Author(s): Alexander Stone & Lydia Ross

### Salon B Oral Presentations 2: Health and Physical Sciences

**8:45 AM:** Cortical Silent Period is not different between Limbs in Patients with Chronic Ankle Instability

Brandon Glover

Faculty Advisor: Dr. Abbey Thomas, Department of Kinesiology Additional Author(s): Christopher Burcal

9:00 AM: Adsorption Studies of Divalent, Dinuclear Coordination Complexes as Molecular Spacers on Nanostructure Carbon Materials Nesreen Elathram S Faculty Advisor: Dr. Jordan Poler, Department of Chemistry

9:15 AM: Highly Fluorescent and Electrochromic Thiazolo[5,4-d]thiazole Viologens
Alexis Woodward
Faculty Advisor: Dr. Michael Walter, Department of Chemistry

**9:30 AM:** Optical Properties by Coupling Plasmonic Nanoparticles and Quantum Dots in Thin Films
Hunter Snooks **S** 

Faculty Advisor: Dr. Marcus Jones, Department of Chemistry

**9:45 AM:** Holmium: YAG versus Thulium Fiber Laser for Minimally Invasive Recanalization of Occluded Ventricular Catheters, Ex Vivo

David Gonzalez

Faculty Advisor: Dr. Nate Fried, Department of Physics and Optical Science



# 10:00 AM: Nucleic acid Based Dendrimers as a Platform for Drug Delivery, Biosensing and Gene Targeting Oleg Shevchenko Faculty Advisor: Dr. Kirill Afonin, Department of Chemistry

10:15 AM: BREAK

**10:25 AM:** Functionally Interdependent, Shape-Switching Nucleic Acid Nanoparticles Morgan Chandler **H** 

Faculty Advisor: Dr. Kirill Afonin, Department of Chemistry

**10:40 AM:** DNA Sequence Dependent Synthesis and Characterization of Silver Nanoclusters Strahinja Talic **H** 

Faculty Advisor: Dr. Kirill Afonin, Department of Chemistry

**10:55 AM:** Molecular Dynamic Investigation of the Effects of Choline Phosphate Salts on Trehalose Glass Transition

Nikita Nikulsin H

Faculty Advisor: Dr. Donald Jacobs, Department of Physics and Optical Sciences

**11:10 AM:** Do Probability Density Estimates from Single Order Statistics
Differ Statistically from Maximum Likelihood?
Layton Hall H

Faculty Advisor: Dr. Donald Jacobs, Department of Physics and Optical Sciences

**11:25 AM:** Mesoporous Silica Nanoparticles for the Delivery of siRNA to Down Regulate Tenascin C in Triple Negative Breast Cancer

Brandon Black **H** 

Faculty Advisor: Dr. Juan Vivero-Escoto, Department of Chemistry

**11:40 PM:** The Effects of Isometric Exercise on Immediate Post-Isometric Exercise Glucose Tolerance

Carlie Coates H

Faculty Advisor: Dr. Reuben Howden, Department of Kinesiology

### Salon C Oral Presentations 3: Interdisciplinary and Social Sciences

**8:45 AM:** Lügenpresse: The Anti-Semitism Communicated through Donald Trump's Attacks on the Media

Jakob Zalman Breunig **H** 

Faculty Advisor: Dr. Barbara Thiede, Department of Religious Studies



**9:00 AM:** Voices Against Indifference: The Cuba Project Joseph Obeid **H, G & CE** 

Faculty Advisor: Dr. Diane Zablotsky, Levine Scholars Program

**9:15 AM**: Conceptualizing the Denial of Rights as a Form of Violence Nephdarlie Saint-Cyr **H** 

Faculty Advisor: Dr. Danielle Boaz, Department of Africana Studies

**9:30 AM:** Analysis of U.S. Media Framing Effects of Disease Outbreak and U.S. Travel Policy Gabrielle Clunie **H** 

Faculty Advisor: Dr. Beth Whitaker, Department of Political Science and Public Administration

**9:45 AM:** The Participation and Success of Female Attorneys before the U.S. Supreme Court

Diane Gromelski H

Faculty Advisor: Dr. John Szmer, Department of Political Science and Public Administration

**10:00 AM:** Principals Hiring Preferences in the Age of Accountability Christopher Dong **H** 

Faculty Advisor: Dr. Jason Giersch, Department of Political Science and Public Administration

10:15 AM: BREAK

**10:25 AM:** Digital Identity Creation and Representation of Presidential Candidates on Twitter Rachel West **H** 

Faculty Advisor: Dr. Elizabeth Miller, Department of English

**10:40 AM:** Pushing Past Pain: The Relation between Emotion Regulation and Mental Health in Individuals with a Physical Disability

Samantha Tracy H

Faculty Advisor: Dr. Sara Levens, Department of Psychological Sciences

**10:55 AM:** Filial Piety in Japan Caleb Harmon **H & G** 

Faculty Advisor: Dr. Fumie Cato, Department of Languages and Culture Studies

11:10 AM: God Save the Queen's Things: Race, Class, and Theologies of Property in the 2016 Charlotte Uprising

Casey Aldridge H

Faculty Advisor: Dr. Christopher Cameron, Department of History



**11:25 AM:** Thomas Paine's reflection of the fall of Deism in Revolutionary America Anthony Yeager

Faculty Advisor: Dr. Christopher Cameron, Department of History

**11:40 AM**: Diversity Groups inside Organizations
Jose Fuentes

Faculty Advisor: Dr. Christopher Cameron, Department of History

#### Salon D Oral Presentations 4: Humanities

**8:45 AM:** The Clinical Role of Story in Narrative Therapy Rozie Khashmanian **H** 

Faculty Advisor: Dr. Ralf Thiede, Department of English

**9:00 AM:** Feeling Through Fiction: Exploring the Connection between Engagement with the Harry Potter Series and Empathy Kenia Rios **H** 

Faculty Advisor: Dr. Lori Van Wallendael, Department of Psychological Science

**9:15 AM**: Finding Beauty and Morality in the Brutality of Combat Trauma Hannah Brown **H** 

Faculty Advisor: Dr. Lara Vetter, Department of English

**9:30 AM:** Humor within Young Adult Holocaust Literature Shelby LeClair **H** 

Faculty Advisor: Dr. Sara Minslow, Department of English

**9:45 AM:** "About Us, By Us, For Us": Shakespeare, Dubois, and The Politics of Theatre during The Black Arts Movement

Sara Eudy **H** 

Faculty Advisor: Dr. Kirk Melnikoff, Department of English

**10:00 AM:** Our Mother's Daughters: Exploring Individuality in Relation to Archiving Generational Connections between Black Women and Girls Kelly Brabec **H** 

Faculty Advisor: Dr. Janaka Lewis, Department of English

10:15 AM: BREAK



**10:25 AM:** Beyond East and West: The Politics of Representation, Interrogation, and Adaptation in Pamuk's 'My Name Is Red'

Thomas Simonson H

Faculty Advisor: Dr. Juan Meneses, Department of English

**10:40 AM:** Lower Order Concerns are Concerns in the WRC Christina Ward **H** 

Faculty Advisor: Dr. Heather Vorhies, Department of English

**10:55 AM:** The Curious Incident of the Dog in the Classroom

Victoria White H

Faculty Advisor: Dr. Mark West, Department of English

**11:10 AM:** Examining the Effects of Coping in the Relationship between Perceived Racial Discrimination and Depression in African Americans

Jessica Prince

Faculty Advisor: Dr. Andrew Case, Department of Psychological Sciences

**11:25 AM:** The Rise and Legacy of Anne Boleyn Lauren Welch

Faculty Advisor: Dr. Amanda Pipkin, Department of History

**11:40 AM:** The Narrative of Post-War Japan in the Modern Era: Understanding the Relation of "Myth" from "Fact"

Jonathan Golian **G** 

Faculty Advisor: Dr. Garth Green, Department of Global Studies

### Salon E Oral Presentations 5: Applied and Statistical Sciences

**8:45 AM:** Multiple Linear Regression Analysis: Is Your Car Worth It? Alex Fields

Faculty Advisor: Fei Heng, Department of Mathematics and Statistics

**9:00 AM:** Bridge Designing for the Worst of Days Renesha Rodriguez

Faculty Advisor: Dr. Xingjie Li, Department of Mathematics and Statistics Additional Author(s): Kyriakos Vontas & Blake Atkinson



**9:15 AM**: Exploring Student Perspectives and Crafting Best Practices for the University Professional Internship Program at UNC Charlotte

Patrice Donatien

Faculty Advisor: Dr. Stephanie Norander, Department of Communication Studies

Additional Author(s): Austin Phillips

**9:30 AM:** US Light Rail Systems: A Comparison of San Diego, Seattle, and Charlotte Systems Jacob Stein

Faculty Advisor: Dr. Eric Delmelle, Department of Geography and Earth Sciences

**9:45 AM:** Sunday Early Voting and Minority Voter Participation in North Carolina Brian Conner

Faculty Advisor: Dr. Martha Kropf, Department of Political Science and Public Administration

**10:00 AM:** Brexit Referendum: Effect of Geographical Region on Voter Turnout Amber Pendlay **G** 

Faculty Advisor: Dr. Martha Kropf, Department of Political Science and Public Administration

10:15 AM: BREAK

**10:25 AM:** Using Soils to Understand Drainage Basin Impact on Tributary Alluvial Fans in Uwharrie National Forest, North Carolina

Nick Allison S

Faculty Advisor: Dr. Missy Eppes, Department of Geography and Earth Sciences Additional Author(s): Spencer Young & Catherine Opalka

**10:40 AM:** From Eighteen Hours to Two: Bringing Video Tracking to the Masses Michael Ciociola

Faculty Advisor: Dr. Min Shin, Department of Computer Sciences
Additional Author(s): Kyle Talarico

**10:55 AM:** Communication across the Curriculum Program Evaluation Katherine Berneo

Faculty Advisor: Dr. Heather Bastian, Office of Undergraduate Education Additional Author(s): Alexis Mitchell

**11:10 AM:** Ignition of Attic Insulation Foams Subjected to Firebrands Eric Hamann **CE** 

Faculty Advisor: Dr. Aixi Zhou, Department of Engineering Technology and Construction Management



#### **Poster Presentations**

Judging Begins: 1:30 PM

Open to the Public: 2:00 PM – 4:00PM

### 1. Smelling the Roses or Smelling the Pollution: Differences in Air Quality between Commuter and Residential Areas

Cecilia Moore, Department: Academic Affairs S
Faculty Advisor: Provost Joan Lorden

#### 2. Craft Brewery Industry Impact and Growth in NC

Luisa Donoso, Department: Anthropology **S**Faculty Advisor: Dr. Catherine Fuentes

#### 3. Form Making as a Product of Climate and Urban Context

Bekim Sejdiu, Department: Architecture **H,S**Faculty Advisor: Dr. Dale Bentrup

#### 4. Identifying Cancer Drug Targets Using a Novel Yeast Small Compound Screen

Elvira An, Department: Biological Sciences **H**Faculty Advisor: Dr. Richard Chi

#### 5. Characterization of Plasma Membrane Vesicle to Endosome Fusion in Budding Yeast

Henry Weaver, Department: Biological Sciences **H**Faculty Advisor: Dr. Richard Chi

#### 6. Phylogenetic Analysis of Epidemiologically Distinct Dengue Virus Strains

Lambodhar Damodaran, Department: Biological Sciences **H**Faculty Advisor: Dr. Daniel Janies

#### 7. Global Warming May Kill Us Before it Kills the Earth

Elizabeth Kay, Department: Biological Sciences **H**Faculty Advisor: Dr. Aaron Kampe

### 8. Celecoxib Treatments can Mitigate Immunosuppressive Effects of Tumor Microenvironment on CAR T cells

Erica Cherian, Department: Biological Sciences **H**Faculty Advisor: Dr. Pinku Mukherjee

#### 9. Studying the Interplay between Hsp70 and Autophagy

Monserrat Cuevas, Department: Biological Sciences **H**Faculty Advisor: Dr. Andrew Truman



## 10. Understanding the Role of the Ydj1/DNAJA1 Co-chaperone Protein in Ribonucleotide Reductase Activity

Issac Sluder, Department: Biological Sciences **H**Faculty Advisor: Dr. Andrew Truman

### 11. Use of the Butterfly Highway to Engage Elementary Students in Citizen Science

Lauren Lubejko, Department: Biological Sciences S, CE Faculty Advisor: Dr. Carrie Wells

### 12. Morphometric Analysis of Wings in the Threatened Diana Fritillary Butterfly, Speyeria Diana

Justin Orders, Department: Biological Sciences S
Faculty Advisor: Dr. Carrie Wells
Additional Author(s): Arryn Munn

#### 13. Role of NEIL3 Zf-GRF Motifs in Genome Stability

Anh Ha, Department: Biological Sciences **H**Faculty Advisor: Dr. Shan Yan

#### 14. Broc-Coli Split Fluorescent RNA Aptamer

Dylan Dang, Department: Chemistry Faculty Advisor: Dr. Kirill Afonin Additional Author(s): Sameer Sajja

#### 15. Programmable RNA Fibers for Controlled siRNA Delivery

Lauren Rackley, Department: Chemistry
Faculty Advisor: Dr. Kirill Afonin
Additional Author(s): Jaclyn Smollett, Brandon Roark, Jaimie Stewart

# 16. Synthesis and Characterization of Chalcogenide Capped Trinuclear Nickel Clusters for Superatomic Solids

James Knopp, Department: Chemistry **S**Faculty Advisor: Dr. Christopher Bejger

### 17. Progress towards Sulfur-bicapped Trinuclear Molybidenum Sulfide Cluster Frameworks

Abdul-Rahman Saleh, Department: Chemistry **H**Faculty Advisor: Dr. Christopher Bejger



#### 18. Structural studies of the Sleeping Beauty Transposase

Bailey Stallings, Department: Chemistry
Faculty Advisor: Dr. Joanna Krueger
Additional Author(s): Hannah Nickles, Mackenzie Huneycutt, Diana Joy

#### 19. Molecular Spacers for Maintaining Distance between Carbon Nanotubes

Tyler Keear, Department: Chemistry Faculty Advisor: Dr. Jordan Poler

### 20. Recent Developments in the Coordination Chemistry of Caffeine Sulfide and Selenide

Evan Grimm, Department: Chemistry Faculty Advisor: Dr. Daniel Rabinovich Additional Author(s): Marissa Stryon

#### 21. Iodine Adducts of SpymArE Ligand

Sarah Sturgill, Department: Chemistry Faculty Advisor: Dr. Daniel Rabinovich

#### 22. Production of Sugar Modifying Enzyme

Samantha Weygandt, Department: Chemistry Faculty Advisor: Dr. Jerry Troutman

#### 23. Ageing Study

Camilla Middleton, Department: Chemistry Faculty Advisor: Dr. Michael Walter

# 24. Algal Biofuels: Enhancing Biofuel and Biomass Production via Wastewater Cultivation

Brandon Lewis, Department: Civil and Environmental Engineering S
Faculty Advisor: Dr. Mariya Munir

#### 25. Visual Analytics for Exploring Wiki User Behaviors

Unique Wells, Department: Computer Science Faculty Advisor: Dr. Aidong Lu

# 26. Creating an Effective Learning Environment Through Inclusivity and Anatomical Approaches to Ballet Pedagogy

Makayla Church, Department: Dance Faculty Advisor: Dr. Gretchen Alterowitz



#### 27. Documenting History: Preserving Korean Dancer Choi Seung-hee's Legacy

Lillian Willis, Department: Dance G Faculty Advisor: Dr. Kim Jones

#### 28. Star Wars Themed Competition Robot

Shay Marceau, Department: Electrical and Computer Engineering Faculty Advisor: Dr. Jim Conrad

#### 29. System for Interior Structural Inspection

Austin Stilwell, Department: Engineering Technology and Construction Management Faculty Advisor: Dr. Aidan Browne

#### 30. Large Diesel Heat Recovery System

Addison Gaines, Department: Motorsports and Mechanical Engineering Faculty Advisor: Dr. Saiful Bari
Additional Author(s): Tyler Small, Matthew Price, Mike Klassen

#### 31. #SUPERNATURAL: Celebrity and Fans Interactions on Twitter

Nora Blevins, Department: English Faculty Advisor: Dr. Elizabeth Miller

### 32. Gilded Coins and New Beginnings: An Assessment of the Parallels between Rudolph Fisher's "The City of Refuge" and Zora Neale Hur

Barry Smith, Department: English Faculty Advisor: Dr. Sarah Minslow

#### 33. The Effects of Urbanization on Benthic Macroinvertebrates

Austin Roberts, Department: Geography & Earth Sciences **S**Faculty Advisor: Dr. Craig Allan

#### 34. ENSO and the Relation to U.S. Drought Patterns

Ian Allen, Department: Geography & Earth Sciences S
Faculty Advisor: Dr. Craig Allan
Additional Author(s): Robert Hughes

#### 35. Effects of Ocean Acidity

Alex Brown, Department: Geography & Earth Sciences S
Faculty Advisor: Dr. Craig Allan
Additional Author(s): Matthew Craig



#### 36. Water Sustainability in the Mediterranean Region

Sebastian Alvarez, Department: Geography & Earth Sciences S, G
Faculty Advisor: Dr. Craig Allan
Additional Author(s): Debra Scheurich

#### 37. Effects of Pre-Dam Structures

Calvin Cupini, Department: Geography & Earth Sciences S
Faculty Advisor: Dr. Craig Allan
Additional Author(s): Morgan Long

### 38. Anthropogenic Degradation of Desert Ecosystems and Prospects for Natural Recovery and Restoration

Mackenzie Featherstone, Department: Geography & Earth Sciences S
Faculty Advisor: Dr. Craig Allan
Additional Author(s): Mike O'Flynn O'Brien

#### 39. Long Term Sustainability on North Carolina Beaches

Reid Hutchins, Department: Geography & Earth Sciences S
Faculty Advisor: Dr. Craig Allan
Additional Author(s): Kylie Wallace

#### 40. Anthropocentric Influences on Desertification in Southern California

Mike O'Flynn O'Brien, Department: Geography & Earth Sciences S
Faculty Advisor: Dr. Craig Allan
Additional Author(s): Mackenzie Featherstone, Riley Strickland

#### 41. How Hydro Electric Dams effect Water Management and Water Sustainability

Cory Smith, Department: Geography & Earth Sciences
Faculty Advisor: Dr. Craig Allan
Additional Author(s): Marcus Beasley

#### 42. Aquaponics and Sustainability

Nicole Schoepflin, Department: Geography & Earth Sciences Faculty Advisor: Dr. Craig Allan Additional Author(s): Alexander Christ

#### 43. Recreational Effects on Water

Christina Proctor, Department: Geography & Earth Sciences S
Faculty Advisor: Dr. Craig Allan
Additional Author(s): Kendall O'Neill



#### 44. The Florida Everglades: A Threatened Ecosystem

Austin Welch, Department: Geography & Earth Sciences S
Faculty Advisor: Dr. Craig Allan
Additional Author(s): Mary Roop

### 45. Establishing Seasonal Variation in a Stream's Response to Rain Events via Hydrograph Analysis

Matthew Veasey, Department: Geography & Earth Sciences Faculty Advisor: Dr. Craig Allan

#### 46. Constructed Wetlands and Surface Water Augmentation

Matthew Veasey, Department: Geography & Earth Sciences Faculty Advisors: Dr. Sandra Clinton

#### 47. Advances in Saltwater Intrusion Pumping

Riley Strickland, Department: Geography & Earth Sciences S
Faculty Advisor: Dr. Sandra Clinton

#### 48. Desertification

Riley Strickland, Department: Geography & Earth Sciences S
Faculty Advisor: Dr. Craig Allan
Additional Author(s): Mackenzie Featherstone

#### 49. Almond Farming Effect on Water

Riley Strickland, Department: Geography & Earth Sciences S
Faculty Advisor: Dr. Sandra Clinton
Additional Author(s): Caroline Richardson

### 50. Sustainable Water Quality In Need: Looking at results of pollution via Lake Okeechobee. Florida

Caroline Richardson, Department: Geography & Earth Sciences S
Faculty Advisor: Dr. Craig Allan
Additional Author(s): Matthew Turner

#### 51. Almond Farming and Water Resource Consumption

Caroline Richardson, Department: Geography & Earth Sciences S
Faculty Advisor: Dr. Sandra Clinton
Additional Author(s): Riley Strickland, Karyn Hoggard

#### 52. Acid Mine Drainage

Daniel Gregoire, Department: Geography & Earth Sciences Faculty Advisor: Dr. Sandra Clinton



### 53. Coal Combustion: The Hazardous Pollution of Coal Ash in North Carolina Waters

Kaitlynn Bryan-Scaggs, Department: Geography & Earth Sciences
Faculty Advisor: Dr. Sandra Clinton
Additional Author(s): Daniel Araya, James McGukin

#### 54. Salt Water Intrusion

Matthew Bullock, Department: Geography & Earth Sciences
Faculty Advisor: Dr. Sandra Clinton
Additional Author(s): Chole Nicholson, Matthew Stanbury, Tyler Samples

#### 55. Flint Water Crisis

Brandon Barrans, Department: Geography & Earth Sciences S,CE
Faculty Advisor: Dr. Sandra Clinton
Additional Author(s): Chase Hobbs, Drew Morrison

#### 56. Give Water a Second Chance!

Sabahat Siddiq, Department: Geography & Earth Sciences
Faculty Advisor: Dr. Sandra Clinton
Additional Author(s): Nathaniel Donley, Jodi-Ann Wright, Ekewuikem Agbai

#### 57. Agricultural Impacts on Water Quality

Samantha Connors, Department: Geography & Earth Sciences Faculty Advisor: Dr. Sandra Clinton Additional Author(s): Emilia Torrellas, Austin Hunsuck,

#### 58. Ecological Impacts of Almond Cultivation

Karyn Hoggard, Department: Geography & Earth Sciences S
Faculty Advisor: Dr. Sandra Clinton
Additional Author(s): Riley Strickland, Caroline Richardson

#### 59. Your Fave is Problematic: Fireworks/Explosives

Rhea Greene, Department: Geography & Earth Sciences S
Faculty Advisor: Dr. Sandra Clinton
Additional Author(s): Christina Proctor

#### 60. City of Greensboro Water Resource

Omari McEachirn, Department: Geography & Earth Sciences Faculty Advisor: Dr. Sandra Clinton



### 61. Mitigation of Southern Appalachian Brook Trout Extirpation in the Great Smoky Mountains

Blane Houck, Department: Geography & Earth Sciences S
Faculty Advisor: Dr. Sandra Clinton
Additional Author(s): Matthew Craig, Reid Hutchinson,

#### 62. Two Problems with Dams

Morgan Long, Department: Geography & Earth Sciences Faculty Advisor: Dr. Sandra Clinton Additional Author(s): Austin Roberts

#### 63. Homeless to Housing

Lauren Harrison, Department: Geography & Earth Sciences H, CE Faculty Advisor: Dr. Thomas Howarth Additional Author(s): Tyler Whitaker, Kendra Shaw

#### 64. Positive Effects of Miniature Housing on Communities

Sharat Vyas, Department: Geography & Earth Sciences H, CE
Faculty Advisor: Dr. Thomas Howarth
Additional Author(s): Daniel Head, Anna Baucom

#### 65. Druid Hills Historic Neighborhood

Michelle Nguyen, Department: Geography & Earth Sciences H, S, CE Faculty Advisor: Dr. Thomas Howarth

#### 66. The Challenges of Chartering a Community Land Trust

Robert Russell, Department: Geography & Earth Sciences S
Faculty Advisor: Dr. Thomas Howarth
Additional Author(s): Alexandria Ball, RJ Duane

#### 67. What are the Long Run Results of Digital Inclusion initiatives?

Erin Rollinson, Department: Geography & Earth Sciences H, CE
Faculty Advisor: Dr. Thomas Howarth
Additional Author(s): Kathryn Bard, Micah Thomas

#### 68. Food Insecurity in Gibson Village

Marshall Travis, Department: Geography & Earth Sciences CE Faculty Advisor: Dr. Janni Sorensen Additional Author(s): Todd Doane, Austin Bracewell



## 69. Natural pH control in high-iron groundwater: Mississippi River Alluvial Aquifer, Louisiana

Julie Steensma, Department: Geography & Earth Sciences S
Faculty Advisor: Dr. David Vinson

#### 70. Dakota Access Pipeline

David Wilson, Department: Geography & Earth Sciences Faculty Advisor: Dr. Sandra Clinton

#### 71. Three Oaks Engineering

Hayley Wood, Department: Geography & Earth Sciences Faculty Advisor: Dr. Sandra Clinton

#### 72. Anatomy of a Millpond Deposit, Mill Creek, Cabarrus County

Matthew Stanbury, Department: Geology **S**Faculty Advisor: Dr. John Diemer

#### 73. The Effect of Notch on Muscle Following Downhill Running

James Jones, Department: Kinesiology Faculty Advisor: Dr. Susan Arthur

## 74. Ultrasound Training for the Respiratory Care Practitioner to Aid in Radial Artery Cannulation

Logan Emerson, Department: Kinesiology Faculty Advisor: Dr. Jhaymie Cappiello

#### 75. Exercise-Induced Asthma and its Effect on High School Athletes

Jerome Warren, Department: Kinesiology Faculty Advisor: Dr. Jhaymie Cappiello

#### 76. Burnout and the Healthcare Professional

Barbara Taylor, Department: Kinesiology Faculty Advisor: Dr. Jhaymie Cappiello

#### 77. Creating a Therapist Driven Algorithm

Kimberly Metzler, Department: Kinesiology Faculty Advisor: Dr. Jhaymie Cappiello

#### 78. Continuous Albuterol Therapy

Dean VanHart, Department: Kinesiology Faculty Advisor: Dr. Jhaymie Cappiello



### 79. Evaluating the Outcome of 6-minute walk test in Pulmonary Rehabilitation 2 days per week verse 3 days per week

Nancy Eudy, Department: Kinesiology Faculty Advisor: Dr. Jhaymie Cappiello

#### 80. NIV Use In The Emergency Room

Shannon Hale, Department: Kinesiology Faculty Advisor: Dr. Jhaymie Cappiello

#### 81. Obesity and Peep

Brian Ring, Department: Kinesiology Faculty Advisor: Dr. Jhaymie Cappiello

#### 82. The Medical Technologies of Capnography

Carla Hester, Department: Kinesiology Faculty Advisor: Dr. Jhaymie Cappiello

#### 83. COPD Specialty Services: Past & Future

Joy Sink, Department: Kinesiology Faculty Advisor: Dr. Jhaymie Cappiello

#### 84. Effective use of Metered Dose Inhalers vs. Nebulizer Therapy

Michael Williams, Department: Kinesiology Faculty Advisor: Dr. Jhaymie Cappiello

#### 85. Treating Your Ventilated Patients One Mode at a Time

Christina Gonzalez, Department: Kinesiology **H** Faculty Advisor: Dr. Jhaymie Cappiello

#### 86. Optimizing OptiFlow Jr. in the ED

Lauren McCall, Department: Kinesiology Faculty Advisor: Dr. Jhaymie Cappiello

#### 87. Withdrawal of Care and the Impact on Healthcare Workers

Robin Reese, Department: Kinesiology Faculty Advisor: Dr. Jhaymie Cappiello

#### 88. ICN Competency Exam

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### 89. Is Heated High Flow Nasal Cannula a Better Alternative Oxygen Method Compared to Non-Invasive Ventilation?

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#### 90. Arterial Line Insertion

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#### 91. Educating Respiratory Therapists about Surfactant

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#### 92. Alaska: The Last Frontier for Respiratory Therapy Licensure

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#### 93. Comparing First-pass Endotracheal Intubation Success Rates

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#### 94. Distinguishing Cognitive Function in COPD Patients

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#### 95. Pediatric Asthma Clinical Pathways

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#### 96. Kinesiology Poster

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#### 97. Respiratory Therapy Orientation Structure in Acute Care

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### 98. Effects of a 4-Week Balance Training and Cognitive Loading Program in Subjects with Chronic Ankle Instability (CAI)

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#### 99. Prone Ventilation

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#### 100. Ventilator Associated Pneumonia Prevention

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#### 101. Improving Asthma Education

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### 102. How much do Respiratory Therapists understand Nutritional Support for Ventilated Patients and Interventional Indirect Calorimet?

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#### 103. A Respiratory Therapist as a Discharge Planner for COPD Patients

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#### 104. Pulmonary Hypertension Education with Inhaled Tyvaso Protocol

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#### 105. High Frequency Ventilation During Neonatal Transport

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#### 106. Building a Lung Navigation Program

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#### 107. A Comprehensive Education Program on Proper Inhaler Device Usage

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# 108. Exploring the Role of Respiratory Therapy in the Virtual Critical Care Initiation of a Pulmonary Rehabilitation Program

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#### 109. Development of Protocol to Optimally Titrate PEEP in ARDS Patients

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#### 110. Aerosol Therapy during High-flow Humidified Oxygen Therapy

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#### 111. Detecting and Treating Sleep Disordered Breathing

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#### 112. Educational Compliance within the COPD patient

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#### 113. Mobilization of the Intubated Patient

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#### 114. Providing the Necessary Care for a CF patient upon Hospital Admission

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#### 115. Respiratory Therapy in the Nursing Home

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#### 116. Improving Blood Panels of Mecklenburg County

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#### 117. Respiratory Therapy Orientation Structure in Acute Care

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#### 118. Effectiveness of Smoking Cessation Programs

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#### 119. Prone Ventilation Protocol

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#### 120. Secretion Clearance Therapy

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#### 121. Respiratory Care Sickle Cell Crisis Protocol

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#### 122. Breath Actuated Nebulizer Efficacy and Cost Analysis

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#### 123. Inhalers Versus Nebulizers for Long Acting Medications

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#### 124. The Immediate Effect of Orthotics on Postural Control

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#### 125. Immediate Effect of Plantar Massage on Postural Control

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#### 126. Animals have a Community Impact

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#### 127. Strategies for Building Self-esteem and Confidence

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#### 128. The Importance of Self-Care for Domestic Violence Survivors

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#### 129. Arts For Life - Volunteer Recruitment

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#### 130. Latinx Youth Education

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#### 131. Things I Wish I Knew....Sickle Cell Awareness

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#### 132. Working with ESL Adults

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#### 133. Spoken Word's Effects on Reading Proficiency in Middle School

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#### 134. Juvenile Substance Abuse Prevention Resources

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#### 135. The Impact of the Charlotte Community Health Clinic

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#### 136. Jamil Food Pantry

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#### 137. The Impact of College Students in the Middle School Classrooms

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#### 138. Technology at Home

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#### 139. After-school Exercise and a Child's Happiness

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#### 140. A Place at the Dining Hall: Food Insecurity on College Campuses

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#### 141. Support for Hispanic Families for College Access

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#### 142. Cheyenne Sioux River Tribe Research and Education: A Day in La Plant

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#### 143. Impact of Grouping with Elementary Students

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#### 144. Effectiveness of Departmentalization in Fifth Grade Classrooms

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#### 145. The Joy of a Joyful Heart

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#### 146. Pat's Place

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#### 147. Need for STEM and Support from Universities

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#### 148. Nutrition Intervention: Elements of a Nutritious Diet

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#### 149. Impact of College Resources on the Attendance of At-risk Youth

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#### 150. The Benefits of Music in Nursing Homes

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#### 151. Creative Teaching

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#### 152. Effectiveness of Math Interventions for Elementary School Students

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#### 153. Effects of After School Programs/Organizations on Foster Children

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#### 154. The Benefit of Literacy Coaching for First Grade Students

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#### 155. Efficacy of Classroom Volunteering

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#### 156. Growing Memories: How Community Gardens Enhance Recovery

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#### 157. Diplomas 2 Degrees

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#### 158. The Effects of Framing on Accountability

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#### 159. Forgiveness in Relationships

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#### 160. Increased Distraction Effectiveness to Reduce Emotional Eating

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#### 161. Finding Your Happy Place: High Mindfulness

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#### 162. Gender Differences in Sleep Quality and Academic Performance

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#### 163. Health Locus of Control & Trait Reappraisal and Suppression

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#### 164. Adaptiveness of Negative Reappraisal Varies along SES Gradient to Predict BMI

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# 165. Does Rumination Moderate the Association Between Perceived Discrimination and Sleep Quality in African Americans?

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### 166. Fashion versus Function: Evaluating the Effects of Fully Posable versus Traditional Barbie Dolls on College Women's Body Image

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#### 167. Multilingualism and Executive Function

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#### 168. Workplace Attitudes

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### 169. Participation, Utilization, and Change in Quality of Life for COPD Patients Offered PR to Go, Compared to traditional PR Program

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#### 170. Investigating the Education of English Language Learners

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#### 171. The Impact of the Pulsera Project

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#### 172. Idealizing Ways to Teach Reading and Writing in First Grade

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#### 173. Assessing Elementary Boys' Interest in Texts within the Classroom Library

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#### 174. Participatory Action Research Project

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#### 175. Gate-Keeper Suicide Prevention Training Program for High School Students

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#### 176. Reigniting the Generation

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#### 177. R.R.I.B Reducing Recidivism and Increasing Bonds

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#### 178. F.U.T.U.R.E.S

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#### 179. Foster Family Community Outreach Event

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#### 180. Green Thumb

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#### 181. The Digital Divide and Community Outreach

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#### 182. Youth Soccer Tournament

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#### 183. Bridging the Gap

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#### 184. Who Run The World.....Girls!

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#### 185. Room in the Inn

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#### 186. Effects of a Diversity-Driven Career Day on Elementary Age Students

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#### 187. Youth Basketball Tournament

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#### 188. Promoting Scholars 3 By 3

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## 189. Prometheus Bound to Euromarxism: Christ and Exteriority in Latin American Liberation Theology

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### 190. Effects of Animal-Assisted Therapy vs. Traditional Therapies in Adult Mental Health Patients

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#### 191. Does Palliative and Hospice care Influence Quality of Life?

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#### 192. Cancer Pain Management

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#### 193. Complementary & Alternative Therapies and Chemotherapy/Radiation

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#### 194. Is the Confusion Assessment Method effective at detecting ICU delirium?

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#### 195. Effects of Aromatherapy on Perioperative Patients

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#### 196. Does Medication Adherence Increase Survival in Cystic Fibrosis Patients?

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#### 197. Semi-Recumbent Positioning in Preventing Ventilator-Associated Pneumonia

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#### 198. Nurse Staffing Related to Patient Outcome and Satisfaction

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#### 199. Comparison of Two Approaches to Treat Adult Obesity

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#### 200. Sexual Harassment Victimization and Perpetration Analysis

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#### 201. Female Disclosure Patterns of Sexual Assault for UNC Charlotte Undergraduates

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#### 202. Water and Sustainability in Ethiopia

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### 203. Internalizations and Measurements of Femininity: Implications for Domestic Violence and Abuse

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#### 204. Sustainability Project for Greece's Water

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