

THE UNIVERSITY OF TEXAS AT TYLER HONORS COLLEGE PRESENTS THE

EIGHTH ANNUAL **LYCEUM**

RESEARCH SHOWCASE



APRIL 14, 2023

**3RD FLOOR OF THE
UNIVERSITY CENTER**

- 9AM-12PM: ORAL PRESENTATIONS • 12PM-1PM: FINE ARTS SESSION
- 1PM-3PM: POSTER SESSION • 3:30PM: AWARDS CEREMONY



Dear Friends,

Welcome to the eighth annual Lyceum Student Research Showcase! As a part of the University of Texas at Tyler's Research Month, we have today over 120 student scholarly projects on the widest range of topics. Whether you attend the panels in the morning or the poster session in the afternoon, you will have the opportunity to learn about so many things, from the efficiency of heat transfer in cookware, to the use of methamphetamine in the Third Reich, and even snake fungal disease. The students at this year's Lyceum make up a diverse group of scholars, who, alongside their professors, have expanded the boundaries of our knowledge. The creation, expansion, and communication of knowledge lies at the heart of UT Tyler's mission, and today's showcase demonstrates the ability, insight, and work ethic of our entire campus community.

This year's Lyceum ushers in two new and significant moments in our institution's history. For the first time we are hosting the Lyceum as the University of Texas at Tyler's Honors College. In January of 2023, President Calhoun and Provost Mirmiran made our transition from the Honors Program to the Honors College official. We are grateful for their advocacy and support of programs like the Lyceum, which remind all of us of the value of scholarly inquiry.

More importantly, today's Lyceum features some very special guests, honors students from Tyler Junior College. We are grateful for our cross-town honors colleagues, Dave Funk and Dannika Blackhurst, who have supported their students in presenting at this year's Lyceum. Please be sure to visit with the TJC Honors students and make them feel welcome!

Finally, to our guests, student presenters, and audience, we thank you for your presence here and hope you enjoy all that our students and campus have to offer.

Sincerely,

A handwritten signature in blue ink that reads "Paul D. Streufert". The signature is fluid and cursive, with a long horizontal line extending to the right.

Dr. Paul D. Streufert—Dean of the Honors Program

List of Judges:

May Abdelaziz	Forrest Kaiser
Mohammed Ali	Lauren Kirby
Carlos Alvarez	Debbie Koslover
Katie Anders	Carla Lacerda
Allison Aragon	Cameron Long
Kassie Archer	Rachel Mason
Joshua Banta	Adam McGuire
Regan Beckham	Brandy Meadows
Sean Black	Tina Melamed
Sydni Blundell	Sarah Norrell
Sarah Bowdin	Vivek Pandey
Terry Britt	Dustin Patterson
Sean Butler	Joe Provencher
Daisy Chisenhall	Katie Ramirez
Yonjoo Cho	Audrey Richardson
Madeline Dawsey	Jennifer Scott
Farah Deba	Nathan Smith
Susan Doty	Colin Snider
Vandy Dubre	Mena Souliman
Jeff Emge	Robert Sterken
Kristian Fischer	Matt Stith
Mary Fischer	Eric Stocks
Nelson Fumo	Katie Stone
Terra Gullings	Paul Streufert
Katrina Henley	Shawana Tabassum
Derek Holbrook	Lauren Thomas
Vanessa Joyner	Matthew Vecchione
	Sidney Wilson

Oral Presentation Schedule

9 am Oral Presentation Session:

Panel A:

UC 3140

Moderator: Dr. Tammy Cowart

Abinash Bajgain

Graduate student

Mentor: Dr. Tahsin Khajah

Optimal Design of a Composite Foot Prosthetic Insole using Evolutionary Optimization

Jacob Anthony

Graduate Student

Mentor: Dr. Chung-Hyun Goh

Novel Method for Multiple Point Joint Analysis to Optimize Knee Joint Movement for Robot-Aided Gait Training

Sufian Almitwali

Graduate Student

Mentor: Dr. Chung-Hyun Goh

Development of the Next Generation Smart Artificial Ventilation Device

Ratri Mukherjee

Graduate Student

Mentor: Dr. Premanan Indic

Significance of INter-Hypoxemia Interval in Early Detection of Adverse Outcome in Preterm Infants: A Machine Learning Approach

Panel B:

UC 3422

Moderator: Dr. Torey Nalbone

Dinesh Shrestha, Prabhat Kattel, Shoukath Sulthana, Jiří Trousil, David Pearson

Undergraduate Students

Mentor: Dr. Santosh Aryal

Synthesis and Characterization of Therapeutic Nanoparticle: Impact of Nanoparticle Weight on Cellular Behaviors

Justin Wright

Undergraduate Student

Mentor: Dr. Ali Azghani

RT-qPCR Analysis of Intrinsic Resistance Genes in 26 Multi- Drug Resistant Pseudomonas Aeruginosa Clinical Isolates

Thierry Assamoi

Undergraduate Student

Mentor: Dr. Rachel Mason

Creation of Inexpensive and Robust Gas Phase IR Cell

Peter Nsiah

Graduate Student

Mentor: Dr. Vijayakumar Boggaram

PPAR- γ Regulation of Induction of Inflammatory Mediators by Organic Dust in THP-1 Macrophage Cells

10 am Oral Presentation Session:

Panel A:

UC 3422

Moderator: Dr. Amir Mirmiran

Ethan Wild, Thomas Willingham, Ruben Cerna, Ryan Willis, Erik Vazquez

Undergraduate Students

Mentor: Dr. Matthew Lucci

Analysis of the Space Shuttle Columbia Accident

Cameroon Eastman, Jonathan McMullen, Karli Stanley, Devansh Singh,

Matthew Goodson, Benita Ibabaza

Undergraduate Students

Mentor: Dr. Matthew Lucci

Novel Research into the Collapse of the Florida International University Pedestrian Foot Bridge

Austin Sizemore, Jacob Campbell, Jessica Taylor, Julian Mendes,

Jose Suarez, Trent Rogers

Undergraduate Students

Mentor: Dr. Matthew Lucci

Aerogel: A Thermal Shield for O-Rings

Mayokun Oke, Graduate Student

Mentor: Dr. Fernando Resende

Effects of Catalysts and Operating Conditions on the Hydrothermal Liquefaction of Saccharina Latissima for the Production of Biofuel

Panel B:

UC 3322

Moderator: Dr. Torey Nalbone

David George

Undergraduate Student

Mentor: Dr. Michael McGinnis

Realistic Hydraulic Design

Colton Kelley

Undergraduate Student

Mentor: Dr. David Hull

“Can you Repeat that, Please?”; ERP Learning Outcomes by Teaching Methods

Nickolas Rios

Graduate Student

Mentor: Dr. Mark Owens

The Art of Nuclear Negotiation

Ben Burns

Undergraduate Student

Mentor: Dr. Clifford Bearden

Machine Learning and its Applications to Recommended Systems

Panel C:

UC 3140

Moderator: Dr. Colleen Swain

Joanna Fagan

Graduate Student

Cultural Humility and the Therapeutic Alliance

Mentor: Dr. Sarah Sass

Paige Lloyd

Graduate Student

Supporting New Teachers and the Impact on Teacher Retention, Student Achievement, and Campus Efficacy

Mentor: Dr. Forest Kaiser

Kristen Patterson

Graduate Student

Intimate Partner Violence Trauma: A Qualitative Study focused on Counselor Training Implications for Counseling Women who have Experienced Intimate Partner Violence

Mentor: Dr. Ramona Grad

Egor Shestakov

Undergraduate Student

The relationship between Obesity, Health, and socioeconomic factors

Mentor: Dr. Meryem Saygili

11 am Oral Presentation Session:Panel A:

UC 3422

Moderator: Dr. Javier Kypuros

Md Fahim Shahriar

Graduate Student

Mentor: Dr. Aaditya Khanal

Visual and Investigation of CO₂ Density-Driven Convective Transport in Vertical Hele-Shaw Cell: Implications for Long-Term CO₂ Sequestration

Rashish Adhikari

Graduate Student

Mentor: Dr. Nelson Fumo

Tool for Economic Analysis of Evaporative Coolers

Soniya Poudel Chhetri

Graduate Student

Mentor: Dr. Premanan Indic

Tracking of Bradycardia Events to Study Heart Rates Dynamics of Preterm Infants Using an LSTM- Based Deep-Learning Model

Shah Zayed Riam

Graduate Student

Mentor: Dr. Aaditya Khanal

Application and Comparative Performance Evaluation of Machine Learning Models in Predicting CO₂ Trapping in Deep Saline Aquifers

Panel B:

UC 3140

Moderator: Dr. Ken Wink

Suzannah Bozarth

Undergraduate Student

Mentors: Jared Dickson & Dr. Matthew Stith

The Divide: Examining Tyler's Racial History & Demography

Jacob Williams

Undergraduate Students

Mentor: Dr. Colin Snider

Amicum Historicorum

Madison Isenberg

Undergraduate Student

Mentor: Dr. Mandy Link

Volksdrogen: The Third Reich Powered by Methamphetamine

Kelsey Roberson

Undergraduate Student

Mentor: Anita Brown

Crises for Freedom: The Endurance of Social Reforms

Panel C:

UC 3322

Moderator: Dr. Brent Bill

Jana Swimberghe

Undergraduate Student

Mentor: Dr. Matthew Greenwold

Are all Crawfish Created Equal? A Genetic Study Examining the Relationship Between Two Subspecies and Their Hybrids

Lezley Hart

Undergraduate Student

Mentor: Alan Lizarraga

Correlation Between Snake Fungal Disease and Predation by Avian Predators

Sarah E. Glaesemann

Graduate Student

Mentor: Dr. Sean C. Butler

Synthetic Studies of Draginamide E and its Potential Treatment of Leishmaniasis

Creative Projects

Mabry Theatre

Moderator: Dr. Paul Streufert

1. **Megan Gray**
Graduate Student
Exploring the Ideas of Emotion Through Different Materials and Processes
Mentor: Dewane Hughes
2. **Mark Mata, Lily Cahal, & Ani Aparicio,**
Undergraduate Students
Woodwind Ensemble Pieces for Two Flutes and Clarinet
Mentors: Sharon Deuby & Sue Bugg
3. **Luis E. Perez**
Undergraduate Student
Exploring the Power and Ephemerality of Intimacy in the Ordinary
Mentor: Alexis Serio
4. **Zoe Williams**
Undergraduate Student
Connection
Mentor: Alexis Serio

- 9. Mawiya Bin Mukarram Bajusair**
Graduate Student
Development of Machine Learning Model to Predict Alligator Cracking in Asphalt Pavements.
Mentor: Dr. Mena Souliman
- 10. Anageli Balbino & Selena Kwok**
Undergraduate Students
Synthesis of a Polymer End-Capping Agent: Continued Development of an Undergraduate Laboratory Experiment
Mentor: Dr. Sean Butler
- 11. Diala Bani Mustafa**
Graduate Student
Controlled Drug Delivery Through the Hierarchical Design of Microfibers
Mentors: Dr. Shih Feng Chou, Dr. Galina Florova, & Dr. Andrey Komissarov
- 12. Robert Beaudoin**
Graduate Student
Hamouda
The Effect of Nicotinic Receptor Potentiators on Human Lung Cell Viability
Mentor: Dr. Ayman
- 13. Alma Bluesummers & Jonathan Thomas**
Graduate Students
Social comparison on social media and distress in individuals with unmet mental health needs.
Mentors: Dr. Olga Berkout & Jonathan Thomas
- 14. Rachel Boshers**
Graduate Student
Using Compustat in the Business Classroom
Mentor: Dr. Veronda Willis
- 15. Harrison Boynton**
Graduate Student
Affect Intensity in Relationship to Social Anxiety
Mentor: Dr. Michael Barnett
- 16. Savannah Breeding**
Undergraduate Student
Creativity and Dissociation: Connection Between Normative Dissociation and Creative Thinking
Mentor: Dr. Lauren Kirby
- 17. Joseph Brewer**
Graduate Student
Mentor: Dr. McGuire

A Literature Review of Integrating Exercise into PTSD Treatment

- 18. Sarah Burgett**
Graduate Student
High-Resolution Ecological Niche Modeling of Three Texas Crayfish Species Using Hydrology
Mentor: Dr. Joshua Banta
- 19. Eric Burnett, Clay Woodcock, Jose Valdez & Uriel Vela**
Undergraduate Students
Drone Arm Optimization
Mentor: Dr. Muath Salim
- 20. Crawford Cannon**
Undergraduate Student
Heat Transfer Analysis of a Steam Powered Generator
Mentor: Dr. Matthew Lucci
- 21. Jennifer Cole MSN, RN**
Graduate Student
Decreasing stress & anxiety in nursing students: a mindfulness-based program intervention.
Mentor: Dr. Lauri John
- 22. Ethan Collins**
Undergraduate Student
Introduction to Cryptocurrency
Mentor: Dr. Vivek Pandey
- 23. Wren Cook, Savannah Fitch, & Vivian Tavarez**
Undergraduate Students
Attachment Styles and the Relationship to Academic Fulfillment
Mentor: Dr. Yvonne Ralph
- 24. Hannah Cornwell**
Graduate Student
Coping Strategies as a Mediator Between Impulsivity and Depression
Mentor: Dr. Michael Barnett
- 25. Grace Davis**
Undergraduate Student
No title listed
Mentor: Dr. Joanna Neel
- 26. Martha du Preez**
Undergraduate Student
Morita Equivalence and Graph Inverse Semigroups
Mentor: Dr. David Milan

27. Jeanné Dube,

Graduate Student

Mentor: Dr. Michael Barnett

Factor Structure of the Texas Functional Living Scale Among Older Adults

28. Jeanné Dube

Graduate Student

Mentor: Dr. Michael Barnett

The Impact of Task Novelty on a Virtual Reality-Based Procedural Learning Task

29. Rachel Emerine

Graduate Student

Mentors: Dr. Shih-Feng Chou,

Dr. Galina Florova, Dr. Andrey Komissarov

Delivery of Poorly Water-Soluble Drugs using Polymer Fibers and Microparticles

30. Matthew S. Fontanese, Joseph J. Muraira, Christian López, Lance Barela, Alex Garcia, Jeanne M. Dube, Kailee Prentice, & Allison M. Coldiron

Graduate Students

Mentor: Dr. Michael Barnett

General Absorption Mediates Narcissism's Effect on Private but Not Public Self-Absorption

31. Josue Gaona

Undergraduate Student

Mentor: Dr. Ayman

Hamouda

Examining the effect of a substituted carbamate positive allosteric modulator on the $(\alpha 4)3(\beta 2)2$ and $(\alpha 4)2(\beta 2)3$ nicotinic acetylcholine receptors.**32. Sarah Gerrels-Hinkle**

Graduate Student

Mentor: Dr. Michael Barnett

Holier Than Thou: Pathological Narcissism and Religious Commitment Moderate Religious Intolerance

33. Elaina Gonzalez

Undergraduate Student

Mentor: Dr. Ann Beebe

The Objectification and Possession of Women's Bodies in Edgar Allan Poe's Short Stories

- 34. Rebekah A. Griffin, Harrison G. Boynton, William D. Malender,
Erin E. Hulsman, Cameron T. Hicks, Derek C. Killingsworth,
Jenna V. Lao, Samuel C. Van Vleet, Allyson M. Coldiron**
Graduate Students Mentor: Dr. Michael Barnett
Impulsivity Explains Variance Beyond the Big Five in Select Dimensions of
Perfectionism
- 35. Logan A. Guillory, Jake S. Avendano, Harrison G. Boynton, Rebekah A. Griffin,
Mikalea Juarez, Chris Lopez, Hannah E. Cornwell, Karina Kapoor**
Graduate Students Mentor: Dr. Michael Barnett
Emotion Regulation Strategies in Relation to Depression, Anxiety, and Stress
- 36. Adam Hearnberger, Conner Morgan, Katy Perry, Andres Beserra,
Jose Torres, Elisha Kaiser**
Undergraduate Students Mentor: Dr. Mathew Lucci
The Efficiency of Wood Burning Stoves as an Alternative Heat Source
- 37. Cameron Tyler Hicks**
Graduate Student Mentor: Dr. Michael Barnett
Psychopathy and Religious Commitment: Is Right-Wing Conservatism a Possible
Explanation?
- 38. Matthew Hoffman**
Undergraduate Student
An Ongoing Case Study at Creekview High School on the Effects of Air Scrubbers for
Improving Indoor Air Quality.
- 39. Gaini Ibrasheva**
Undergraduate Student Mentor: Dr. Dustin Patterson
Application of HK97 Virus-Like Particles Toward Drug Delivery
- 40. Megan Jameson, Aaron Lance, Steven Uroda, Alan Taylor,
Lizbeth Anchondo, Hugo Carrasco Bohorquez,**
Undergraduate Students Mentor: Dr. Matthew Lucci
Heat Transfer Analysis of an SSD Heatsink

- 41. Anavya Jernigan, Israel Joshua Santhosh, Shoukath Sulthana,**
Undergraduate Students Mentor: Dr. Santosh Aryal
Effect of macrophage derived extracellular vesicles on the surface plasmon resonance induced photothermal properties of gold nanorods
- 42. Derek Killingsworth**
Undergraduate Student Mentor: Dr. Michael Barnett
Avoidant Coping Strategies Mediate the Relationship Between Depressive Symptoms and School Burnout
- 43. Cate Kimball, Abbi Fyffe, Julissa Plancarte, & Akshaya Suresh**
Undergraduate Students Mentor: Dr. Yvonne Ralph
Adolescent Activities and Undergraduate Cognition in Women
- 44. Md Irfan Khan**
Graduate Student Mentor: Dr. Aaditya Khanal
Parametric Study of CO₂ Sequestration in Deep Saline Aquifers using data-driven models
- 45. Macie Kirkby, Shoukath Sulthana, Dinesh Shrestha,**
Graduate Students Mentor: Dr. Santosh Aryal
Studying Immune-Cancer Cell Interactions: A Cell-based Approach for Cancer Treatment
- 46. Kevin Larios & Andrea M. Reyes,**
Undergraduate Students Mentor: Dr. Kathy Miller
Intersection of Human Trafficking and Digital Media Platforms
- 47. Kristel Ledesma**
Undergraduate Student Mentor: Dr. Brent Bill
In vivo Expression Analysis of Parkinson's Disease-Related Genes in Zebrafish
- 48. Christian López**
Graduate Student Mentor: Michael Barnett
Gender Moderates the Relationship Between Attachment Styles and Gratitude

49. Oluwanisola Makinde

Graduate Student

Mentor: Dr. Fernando Resende

Catalytic pyrolysis of beetle killed trees-pine (pinus taeda), ash(fraxinus) and redbay (persea borbonia) for the production of transportation biofuels

50. William Drew Mallender, Erin Hulsman

Graduate Students

Mentor: Dr. Michael Barnett

Parenting Styles in Relation to Life Satisfaction Among Men and Women

Located Around the Third Floor of the University Center:**51. Prem Manoharan**

Graduate Student

Mentor: Dr. Matthew Vechione

Development of Machine Learning Models to Predict Crash Severity in East Texas Under Wet Conditions

52. Prem Manoharan

Graduate Student

Mentor: Dr. Mena Souliman

Development of Predicting Model Using Artificial Neural Network to Predict Transverse cracking length in Wet and Dry No Freeze Climatic Regions.

53. Kaevyn Maple

Graduate Student

Mentor: Dr. Nelly Yuen

The Impact of Race Related Stress of the Self-Esteem in People of Color and its Effect on Self Care Behaviors

54. Kaevyn Maple, Shalet Punnoose, Madeline Rodenbaugh

Graduate Students

Mentor: Dr. Adam McGuire

The Experience of Minority Students: Exploring Unconscious Bias in Higher Education

55. Ethan McCarthy

Undergraduate Student

Mentor: Dr. Leonard Brown

Text Summarization Using Cosine Similarity

56. Daniel McSwain

Undergraduate Student

Mentor: Dr. Jordan Beaver

Synthesis of an Ester Wine Additive from Distillery Waste Streams

57. Amerson Meyers, Kelyne Arnold, Olinda Zusinas

Undergraduate Students

Mentor: Dr. Yvonne Ralph

The relationship between religion, traditional patriarchal values, and opinions on marriage and divorce

58. Reham Mohamed

Graduate Student

Mentor: Dr. Shis-Feng Chou

Cellulose Materials for Drug Delivery Applications

59. Zeeshan Mohammed

Graduate Student

Mentor: Dr. Matthew Vechione

Application of Machine Learning Models to Predict Distracted Driving Crash Severity

60. Zeeshan Mohammed

Graduate Student

Mentor: Dr. Mena Souliman

Study of LTPP Data for Wet-Freeze Climatic Regions for IRI using Artificial Neural Networking (ANN)

61. Itzel Montoya, Itzel Montoya, Salima Karki, Shoukath Sulthana, Santosh Aryal, and May H. Abdelaziz,

Undergraduate Students

Mentor: Dr. May Abdelaziz

Engineering polycaprolactone composite nanofiber antibacterial wound healing scaffolds

62. Yenifer L Morales

Graduate Student

Mentor: Dr. Michael Barnett

Optimists Use Healthy Coping Strategies to Improve their Live Satisfaction

63. Prudviraj Mutyala

Graduate Student

Mentor: Dr. Matthew Vechione

Predicting Crash Severity at Construction Zones with Workers Present

64. Prudviraj Mutyala

Graduate Student

Mentor: Dr. Meena Souliman

Prediction of Faulting in Rigid Pavements by Using Artificial Neural Network

65. Ikechukwu Nsofor

Graduate Student

Mentor: Dr. Carla Lacerda

Testing and Characterization of 3D Bioprints

66. Michael A. Nunez

Undergraduate Student

Mentor: Dr. E. Cory Sills

Filling in the Past: Restoring a Caddo Vessel Using Modeling Software.

67. Esther Nwachukwu

Undergraduate Student

Mentor: Dr. Ali Azghani

Understanding the Mechanism of Pseudomonas Elastase-induced Activation of Epithelial Growth Factor Receptor in vitro

68. Kristinoba Olotu

Graduate Student

Mentor: Dr. Fernando Resende

Novel NI-SIRAL Catalyst for heterogeneous Ethylene Oligomerization

69. Angel Perez

Undergraduate Student

Mentor: Dr. Santosh Aryal

3D Printing Cancer: Bioprinting of Human Breast Cancer Cells in a Hydrogel Scaffold to Replicate Tumor Formation

70. Caleb Phillips

Undergraduate Student

Mentor: Dr. Jordan Beaver

Extraction of Alpha Acids Into Beer as a Function of Temperature, Ethanol Concentration, and Size

71. Kailee P. Prentice

Graduate Student

Mentor: Dr. Michael Barnett

Older Adults' Aging Expectations Explain Variance in Death Anxiety Beyond Personal Control

72. Ryan Rainey, Christopher Constante, Diego Diaz, Tomisin Bami-Ogunbiyi, Tristan Kiehn, Baylor Reed

Undergraduate Students

Mentor: Dr. Matthew Lucci

Examining the mechanical failure of the East Palestine Train derailment of February 2023

73. Isaac J. Rodgerson, Shadow Aiken, Kristen Lewis, Shadow Aiken, Kristen Lewis, and Katelyn Blakely

Graduate Students

Mentor: Dr. Eric Stocks

Agency and compliments: A proposed study towards an understanding of the recipient's attitudes towards compliments

74. Adrian Romero

Graduate Student
Hamouda

Mentor: Dr. Ayman

Larval Expression Of Dopaminergic Neuron Markers For a Parkinson's Disease-like State In Zebrafish

75. Hope Sabella, Ayaan Khan, Gabrielle Thomas

Undergraduate Students
Application of Stem Cell Therapy for Osteoarthritis Pain Management

Mentor: Dr. Farah Deba

76. Israel Joshua Santhosh, Shoukath Sulthana, Ayaan Khan, Farah Deba

Undergraduate Students
Maximizing tumor targeting using engineered extracellular vesicles derived from activated macrophages

Mentor: Dr. Santosh Aryal

77. Wyatt Schaefer

Undergraduate Student
Identification of the Source of C. Perfringens Investigation of Yogurt

Mentor: Kerfoot Pollock Walker III

78. Anas Mehmood Shahid, Tapiwa Mlambo, Florette Nadine Mkamte, Wednere Sampabre, Ishfar Ahmed

Undergraduate Students
Outer Space Sample Acquisition and Caching System at 16-Psyche Asteroid

Mentor: Dr. Hussain Rizvi

79. Mahi Shaikh

Undergraduate Student
Crayfish Phylogenetic Tree

Mentor: Dr. Katrin Kellner

80. Schi-Lee A. Smith

Graduate Student
Phylogenetic Analysis of Four Closely Related Species of Crayfish in Central Texas

Mentor: Dr. Katrin Kellner

81. Bradley Smith

Graduate Student
Application of Machine Learning Models to Predict Rear-End Crash Severity in East Texas

Mentor: Dr. Matthew Vechione

82. Sergio Sola Garcia

Undergraduate Student

Mentors: Dr. Jason Smee and Dr. Dustin Patterson

Simplified Purification of Ferritin Nanoparticles for Vaccine Development via Insertion of Polyhistidine Tag

83. Brent Sternberg, Jacob Stroud, Hans Abeke, Abisay Salvador, Rafael Castillo, Clayton Whiteside

Undergraduate Students

Mentor: Dr. Matthew Lucci

The Effects of Cookware Material on Efficiency of Heat Transfer

84. Jenna Thornhill

Undergraduate Student

Mentor: Dr. Beth Mastel-Smith

Effects of the Vitality Acupunch Exercise on Older Adults with Sarcopenia, A Pilot Study

85. Lucas Ricardo Vega

Undergraduate Student

Mentor: Dr. Robert P. Schumaker

Using Machine Learning to Predict Opioid Abuse in Hospital Settings

86. Shaylee Watson

Undergraduate Student

Mentor: Dr. Cameron Rose

The Impact of Using Appoggio Breathing in a Trained Vocal Setting, the Process, and the Methods for Achieving the Technique

87. Jolie West

Undergraduate Student

Mentor: Dr. Sean Butler

Designing a Reagent for Multiple, Consecutive Titrations in One Vessel

88. Michael Wilkins, David Burbano, Michael Conneen, Angel Perez

Undergraduate students

Mentor: Dr. Muath Bani Salim

Enhancing Precision and Repeatability of Air Sample Measurements in Psychrometric Rooms: Design and Validation of an Unpowered Air Mixing Device for HVAC Systems

89. Bethany Woolman

Undergraduate Student

Mentor: Vicki Conway

A Review of the Current Applications of Music to the Field of Medicine

90. Olinda Zusinas

Undergraduate Student

Does Corticotropin Releasing Hormone Induce miRNA-200b Gene Expression from Exosomes of Triple Negative Breast Cancer

91. Emily Zylka, Tom Guderjan

Undergraduate Students

Mentor: Dr. E. Cory Sills

The Significance of Context in Archaeology: Preserving A Historic Pipe

92. Araceli Gonzalez

TJC Honors Student

Mentor: Dr. Andrea Hathcote

Behind the Use of Makeup: Cultural Differences Among Females

93. Josue Hernandez

TJC Honors Student

Mentor: Dr. Andrea Hathcote

Neuroaesthetics and the Attraction to Artistic Elements

94. Austin Reed

TJC Honors Student

Mentor: Dr. Andrea Hathcote

Neo-Calvinist Principle Application to Apartheid Era South Africa

95. Fernando Rosales

TJC Honors Student

Mentor: Dr. Andrea Hathcote

Obscure Oddities: A Dive into the Furry Fandom Stereotype