2025 Summer Research Program Symposium

High School & Undergraduates


LSU Health
NEW ORLEANS

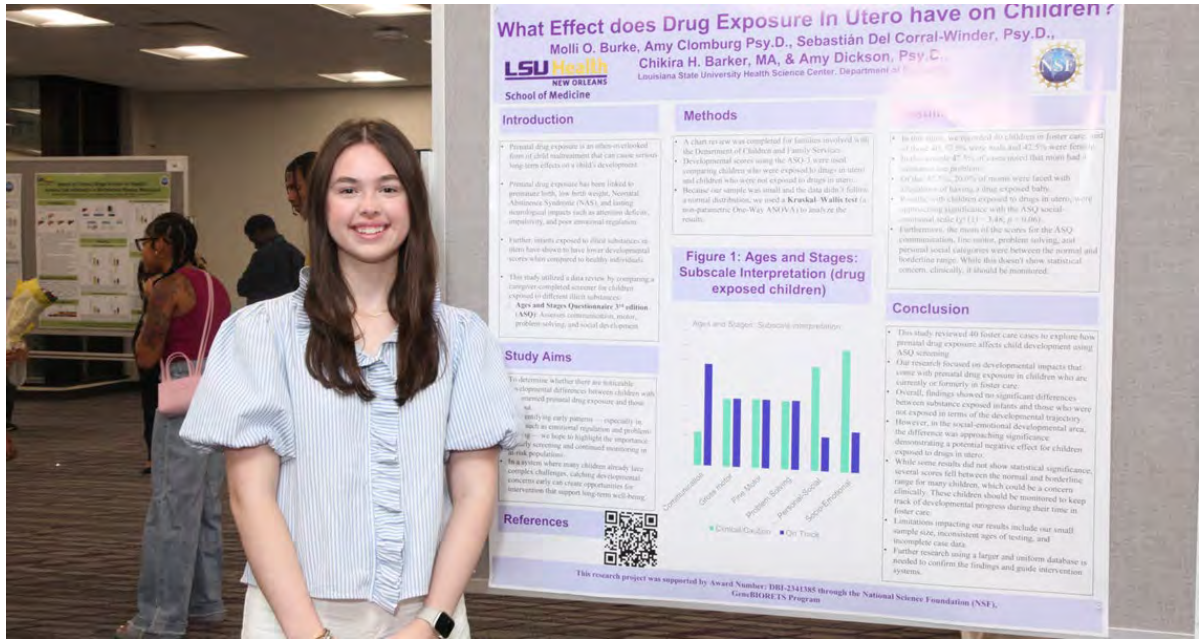
What Effect does Drug Exposure in Utero have on Children?
Molli O. Burke, Amy Clomburg Psy.D., Sebastián Del Corral-Winder, Psy.D.,
Chikira H. Barker, MA, & Amy Dickson, Psy.D.
LSU Health NEW ORLEANS
School of Medicine
Louisiana State University Health Science Center, Department of
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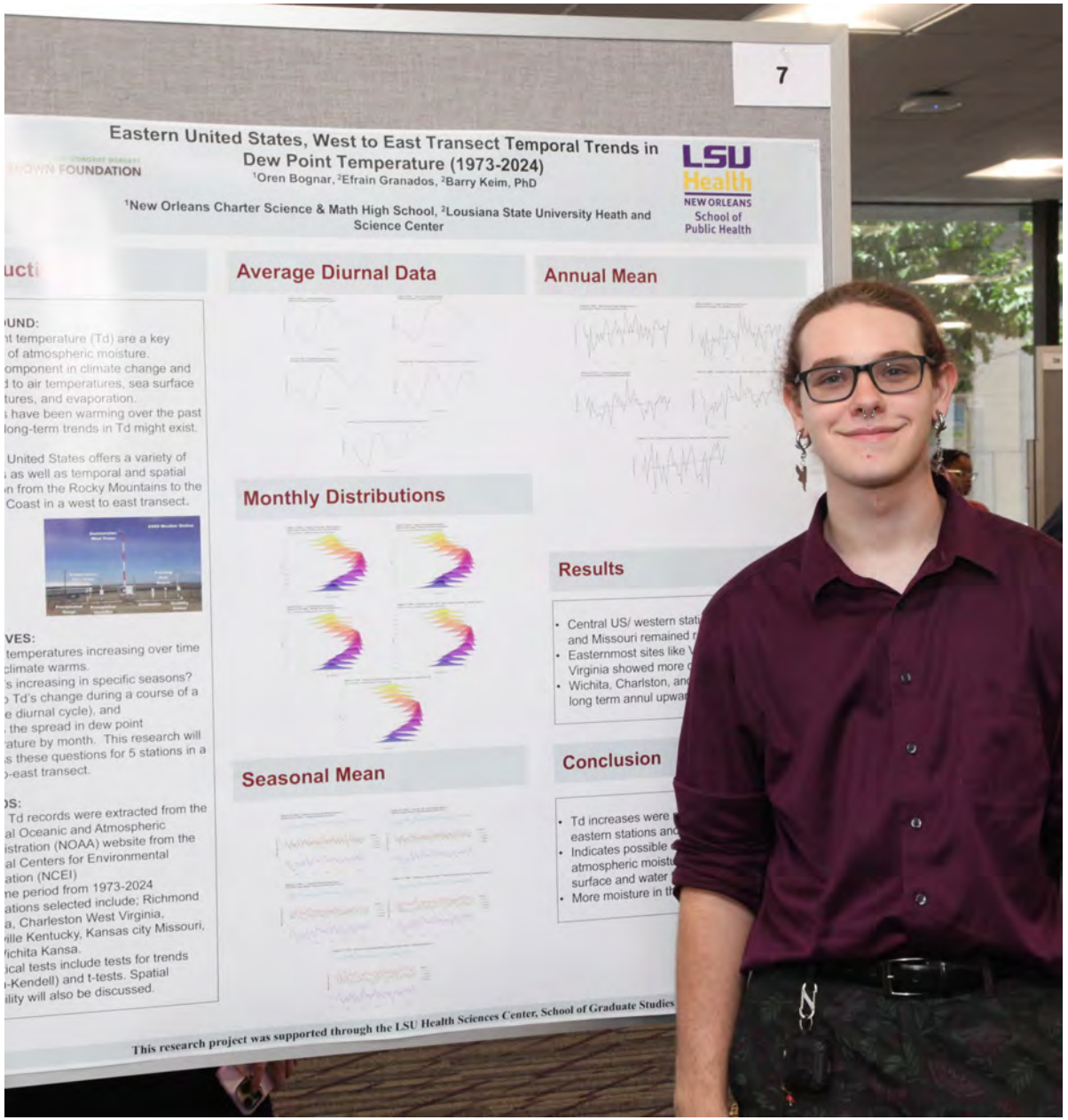
Figure 1: Ages and Stages: Subscale Interpretation (drug exposed children)
Study Aims
Conclusion
References
This research project was supported by Award Number: DBI-2341385 through the National Science Foundation (NSF), GenoBIORETS Program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Eastern United States, West to East Transect Temporal Trends in Dew Point Temperature (1973-2024)
[1]Oren Bognar, [2]Efrain Granados, [2]Barry Keim, PhD
[1]New Orleans Charter Science & Math High School, [2]Lousiana State University Heath and Science Center
LSU Health NEW ORLEANS School of Public Health
Average Diurnal Data
Annual Mean
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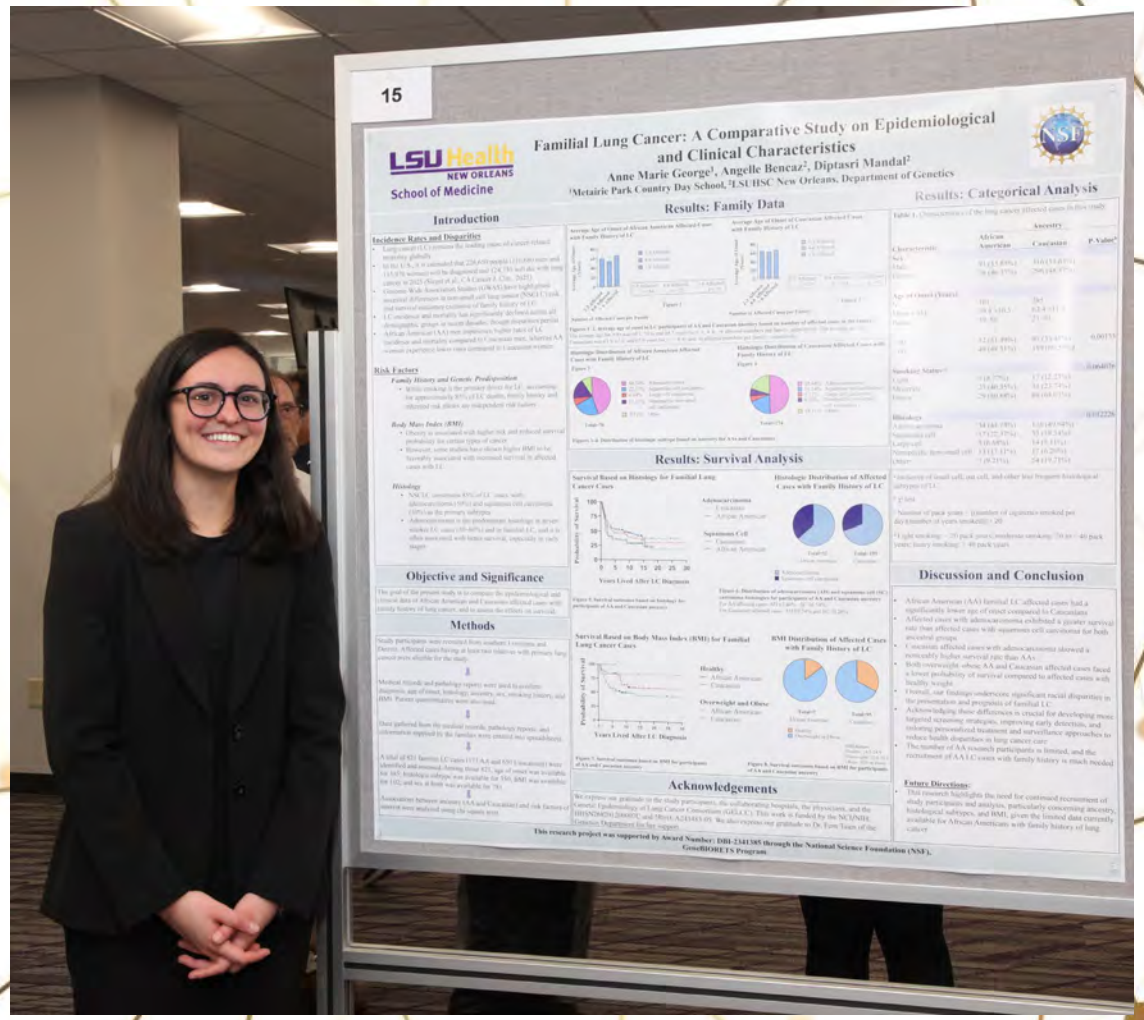
This research project was supported through the LSU Health Sciences Center, School of Graduate Studies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LSU Health NEW ORLEANS School of Medicine
Familial Lung Cancer: A Comparative Study on Epidemiological and Clinical Characteristics
Anne Marie George[1], Angelle Bencaz[2], Diptasri Mandal[2]
[1]Metairie Park Country Day School, [2]LSUHSC New Orleans, Department of Genetics
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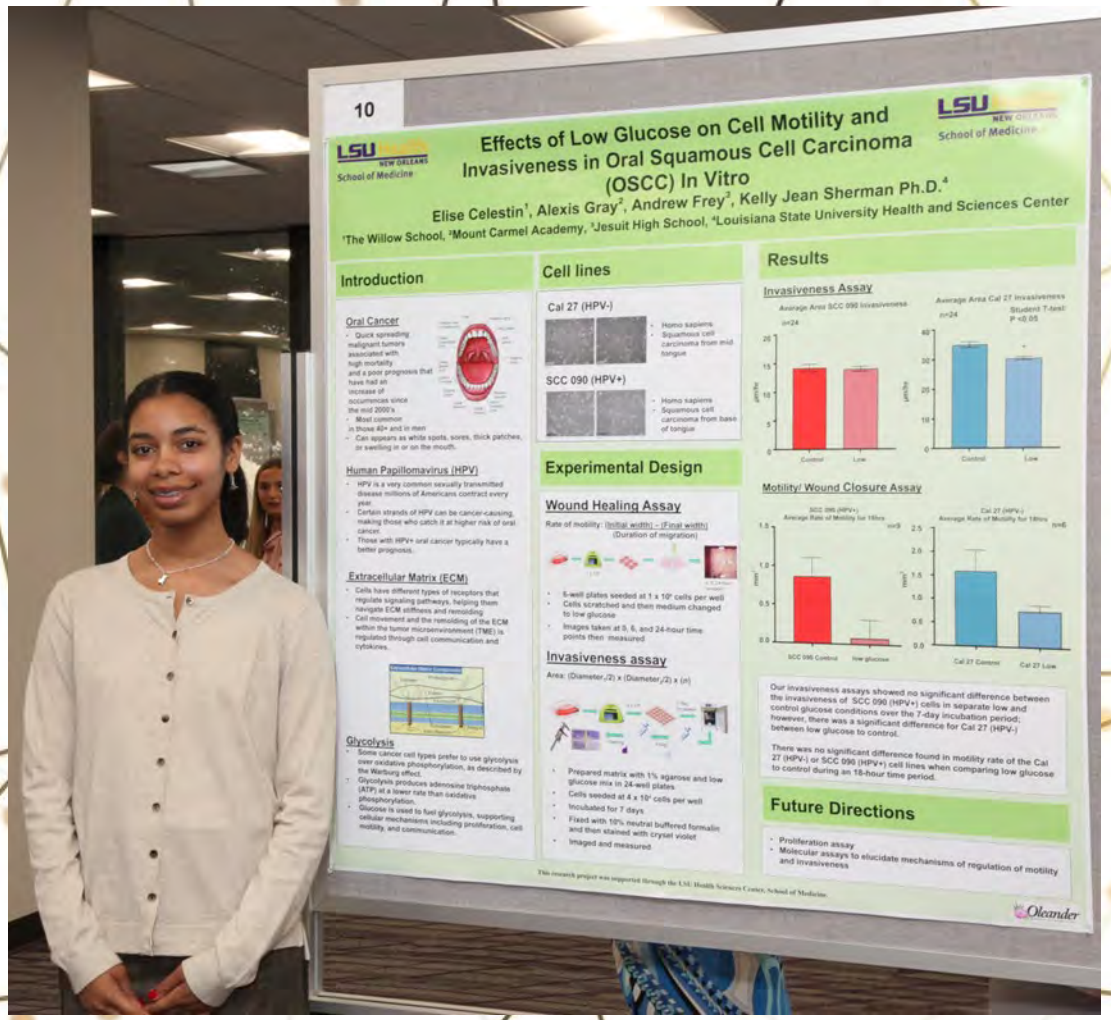
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LSU School of Medicine
Effects of Low Glucose on Cell Motility and Invasiveness in Oral Squamous Cell Carcinoma (OSCC) In Vitro
Elise Celestin[1], Alexis Gray[2], Andrew Frey[3], Kelly Jean Sherman Ph.D.[4]
[1]The Willow School, [2]Mount Carmel Academy, [3]Jesuit High School, [4]Louisiana State University Health and Sciences Center
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Cell lines
Experimental Design
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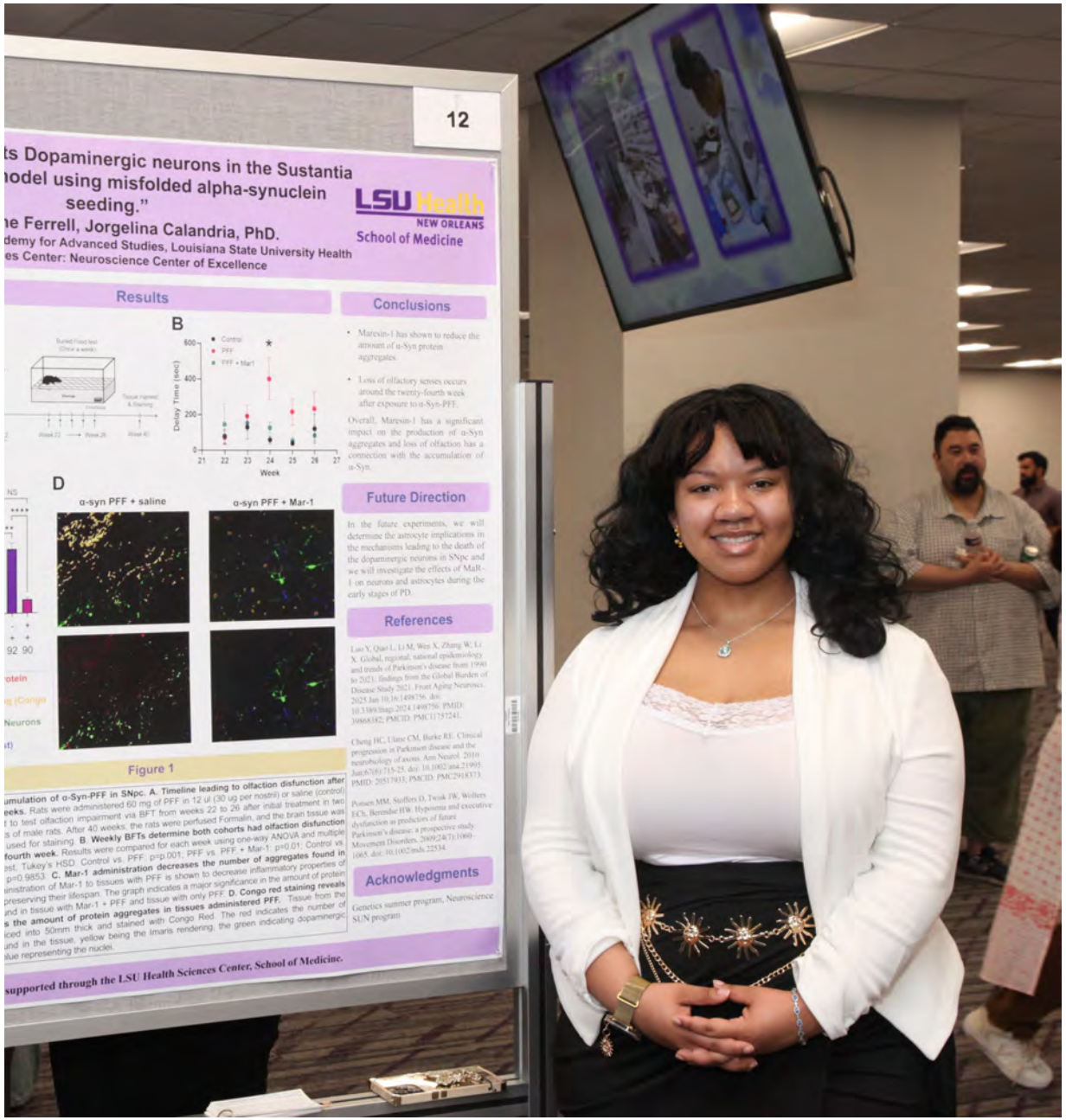
12
ts Dopaminergic neurons in the Sustantia
odel using misfolded alpha-synuclein
seeding."
e Ferrell, Jorgelina Calandria, PhD.
demy for Advanced Studies, Louisiana State University Health
es Center: Neuroscience Center of Excellence
LSU Health
NEW ORLEANS
School of Medicine
Results
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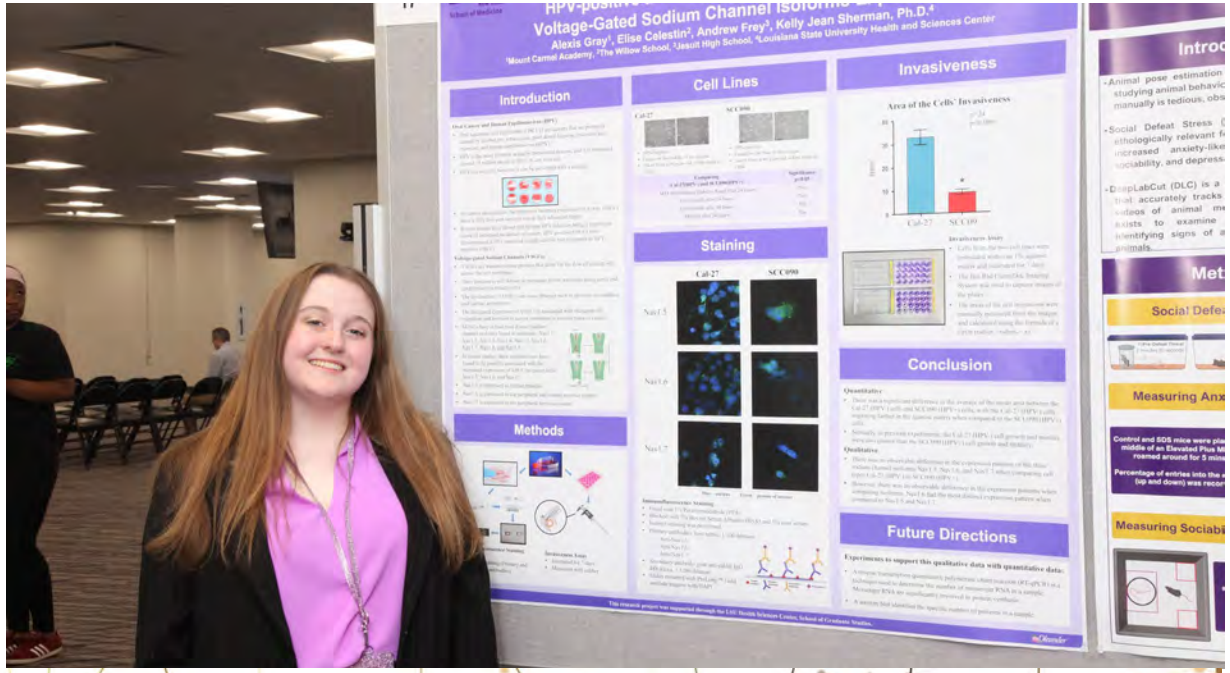
References
Acknowledgments
Figure 1
supported through the LSU Health Sciences Center, School of Medicine.


Voltage-Gated Sodium Channel Isoforme
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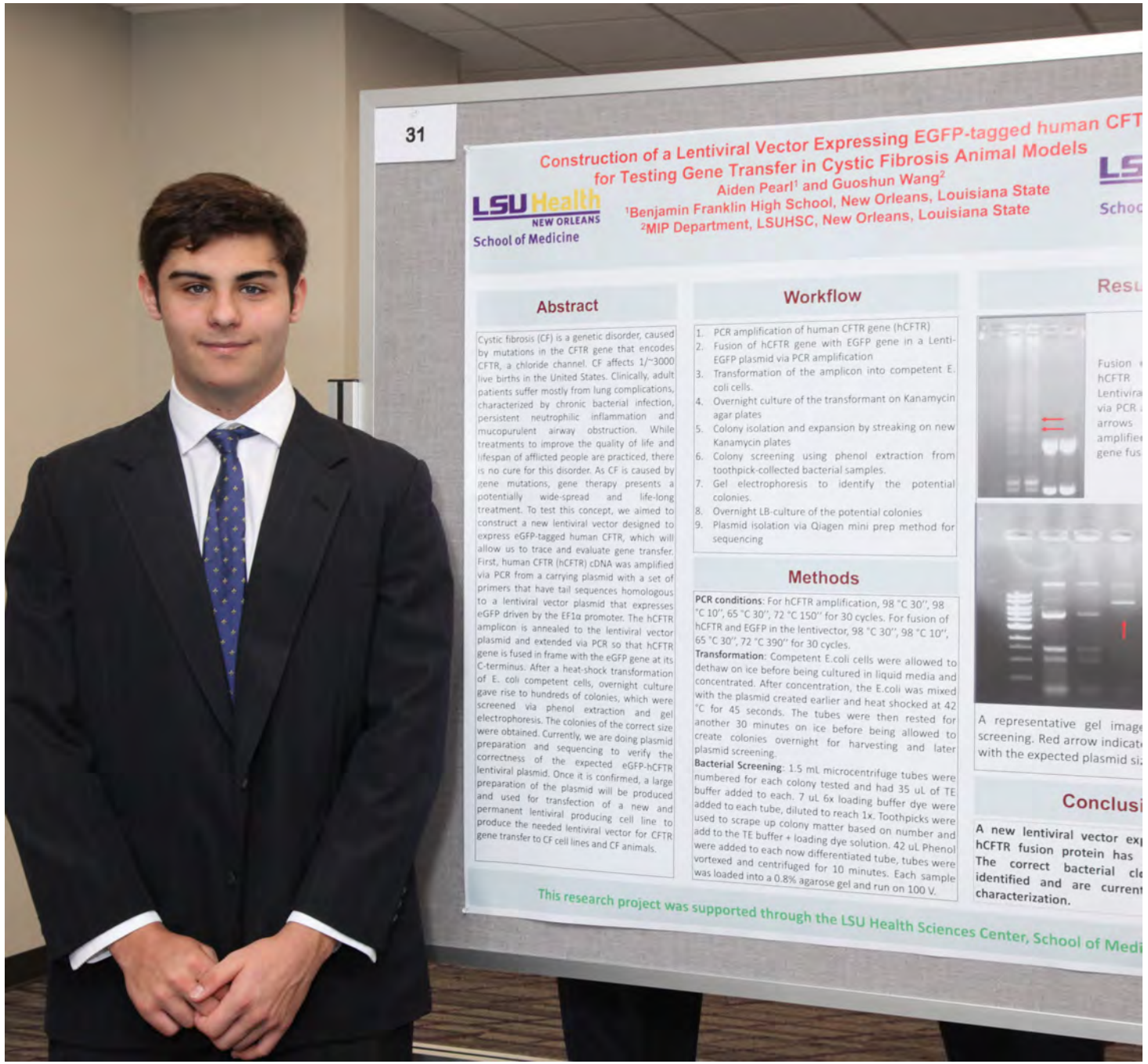
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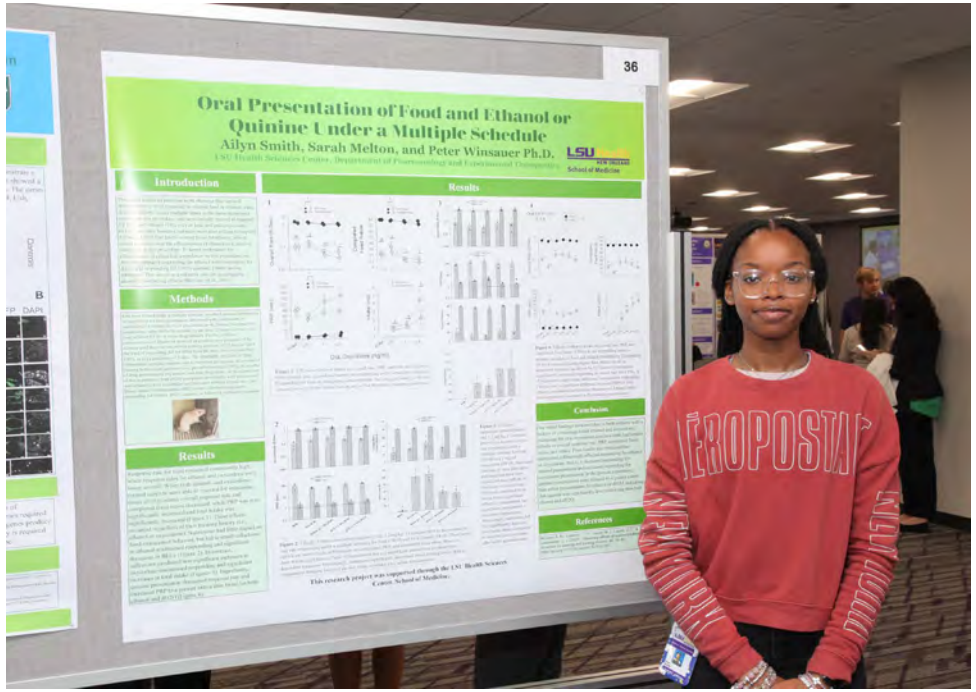
Construction of a Lentiviral Vector Expressing EGFP-tagged human CFT
for Testing Gene Transfer in Cystic Fibrosis Animal Models
Aiden Pearl[1] and Guoshun Wang[2]
[1]Benjamin Franklin High School, New Orleans, Louisiana State
[2]MIP Department, LSUHSC, New Orleans, Louisiana State
LSU Health NEW ORLEANS School of Medicine
Abstract
Cystic fibrosis (CF) is a genetic disorder, caused by mutations in the CFTR gene that encodes CFTR, a chloride channel. CF affects 1/~3000 live births in the United States. Clinically, adult patients suffer mostly from lung complications, characterized by chronic bacterial infection, persistent neutrophilic inflammation and mucopurulent airway obstruction. While treatments to improve the quality of life and lifespan of afflicted people are practiced, there is no cure for this disorder. As CF is caused by gene mutations, gene therapy presents a potentially wide-spread and life-long treatment. To test this concept, we aimed to construct a new lentiviral vector designed to express eGFP-tagged human CFTR, which will allow us to trace and evaluate gene transfer. First, human CFTR (hCFTR) cDNA was amplified via PCR from a carrying plasmid with a set of primers that have tail sequences homologous to a lentiviral vector plasmid that expresses eGFP driven by the EF1α promoter. The hCFTR amplicon is annealed to the lentiviral vector plasmid and extended via PCR so that hCFTR gene is fused in frame with the eGFP gene at its C-terminus. After a heat-shock transformation of E. coli competent cells, overnight culture gave rise to hundreds of colonies, which were screened via phenol extraction and gel electrophoresis. The colonies of the correct size were obtained. Currently, we are doing plasmid preparation and sequencing to verify the correctness of the expected eGFP-hCFTR lentiviral plasmid. Once it is confirmed, a large preparation of the plasmid will be produced and used for transfection of a new and permanent lentiviral producing cell line to produce the needed lentiviral vector for CFTR gene transfer to CF cell lines and CF animals.
Workflow
1. PCR amplification of human CFTR gene (hCFTR)
2. Fusion of hCFTR gene with EGFP gene in a Lenti-EGFP plasmid via PCR amplification
3. Transformation of the amplicon into competent E. coli cells.
4. Overnight culture of the transformant on Kanamycin agar plates
5. Colony isolation and expansion by streaking on new Kanamycin plates
6. Colony screening using phenol extraction from toothpick-collected bacterial samples.
7. Gel electrophoresis to identify the potential colonies.
8. Overnight LB-culture of the potential colonies
9. Plasmid isolation via Qiagen mini prep method for sequencing
Methods
PCR conditions: For hCFTR amplification, 98 °C 30'', 98 °C 10'', 65 °C 30'', 72 °C 150'' for 30 cycles. For fusion of hCFTR and EGFP in the lentivector, 98 °C 30'', 98 °C 10'', 65 °C 30'', 72 °C 390'' for 30 cycles.
Transformation: Competent E.coli cells were allowed to dethaw on ice before being cultured in liquid media and concentrated. After concentration, the E.coli was mixed with the plasmid created earlier and heat shocked at 42 °C for 45 seconds. The tubes were then rested for another 30 minutes on ice before being allowed to create colonies overnight for harvesting and later plasmid screening.
Bacterial Screening: 1.5 mL microcentrifuge tubes were numbered for each colony tested and had 35 uL of TE buffer added to each. 7 uL 6x loading buffer dye were added to each tube, diluted to reach 1x. Toothpicks were used to scrape up colony matter based on number and add to the TE buffer + loading dye solution. 42 uL Phenol were added to each now differentiated tube, tubes were vortexed and centrifuged for 10 minutes. Each sample was loaded into a 0.8% agarose gel and run on 100 V.
Resu
A representative gel image
screening. Red arrow indicat
with the expected plasmid si
Conclusi
A new lentiviral vector ex
hCFTR fusion protein has
The correct bacterial cl
identified and are current
characterization.
This research project was supported through the LSU Health Sciences Center, School of Medi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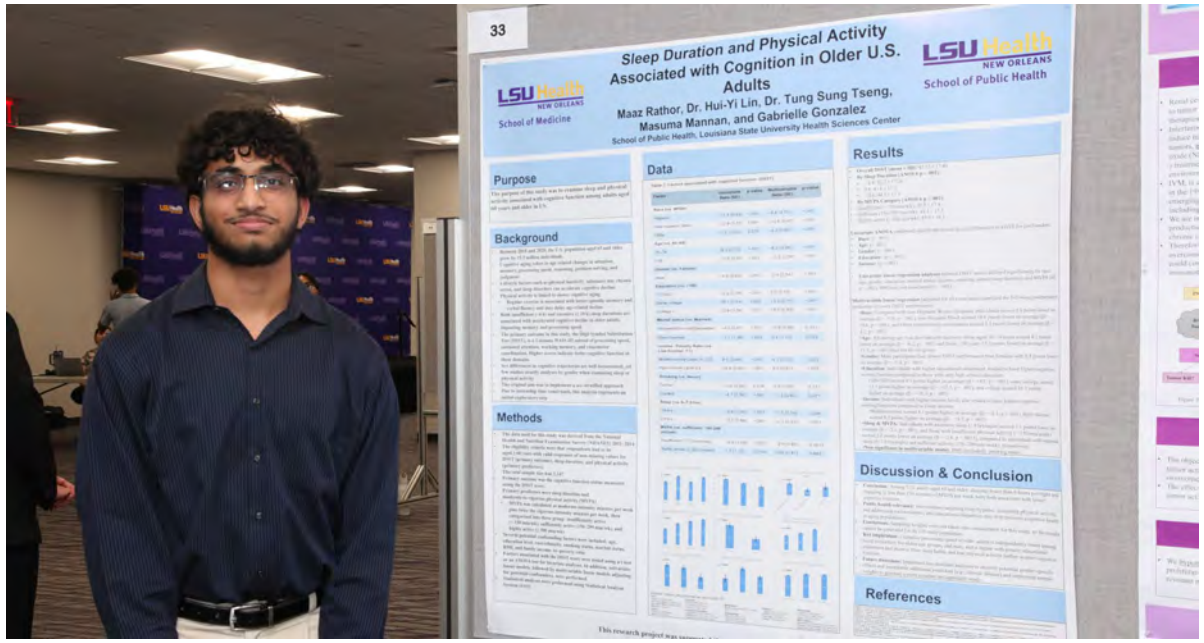
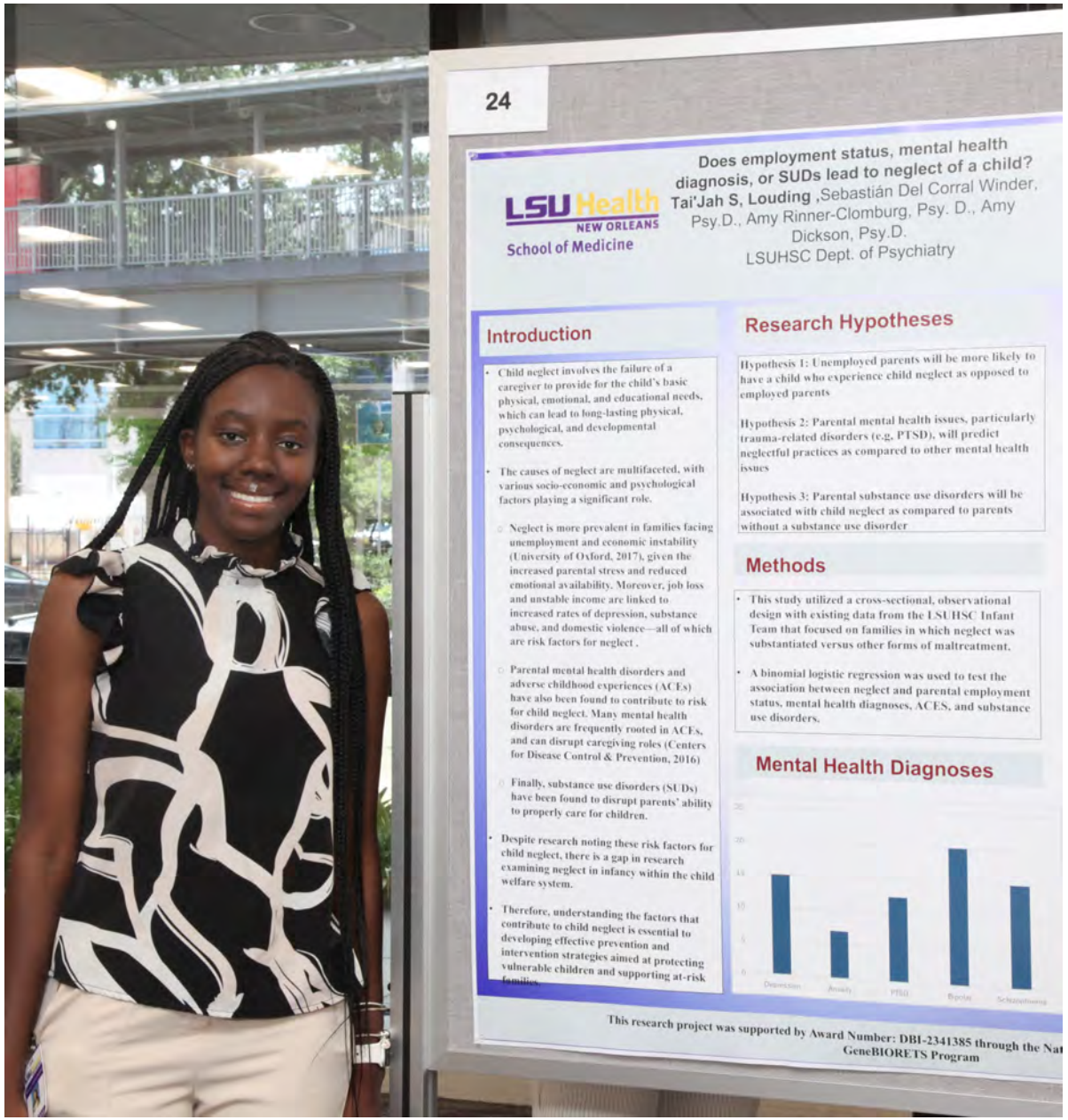
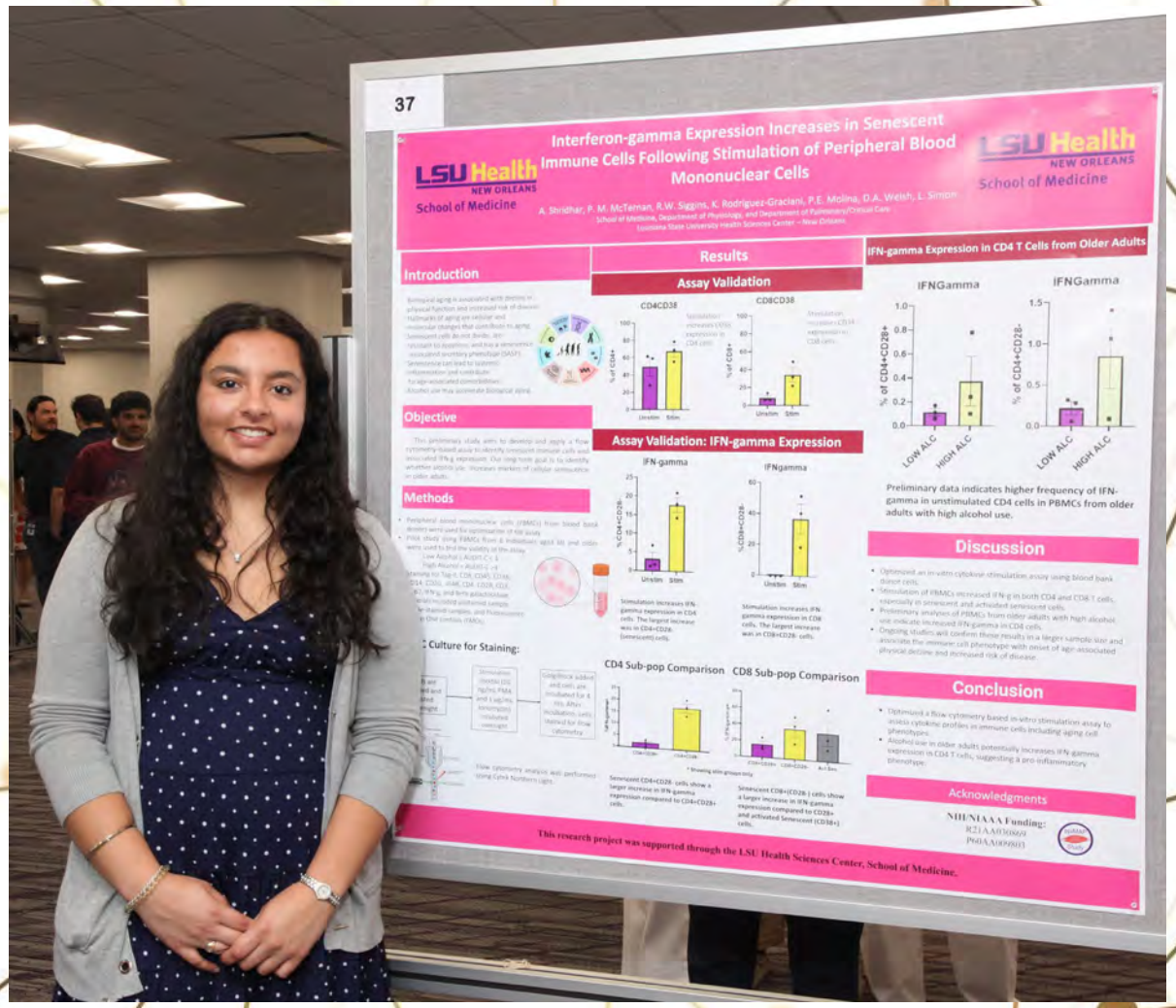
Oral Presentation of Food and Ethanol or Quinine Under a Multiple Schedule
Ailyn Smith, Sarah Melton, and Peter Winsauer Ph.D.
Introduction
Methods
Results
Conclusion
References


33
Sleep Duration and Physical Activity Associated with Cognition in Older U.S. Adults
Maaz Rathor, Dr. Hui-Yi Lin, Dr. Tung Sung Tseng, Masuma Mannan, and Gabrielle Gonzalez
School of Public Health, Louisiana State University Health Sciences Center
LSU Health NEW ORLEANS School of Medicine
LSU Health NEW ORLEANS School of Public Health
Purpose
Background
Methods
Data
Results
Discussion & Conclusion
References


24
Does employment status, mental health diagnosis, or SUDs lead to neglect of a child?
Tai'Jah S, Louding ,Sebastián Del Corral Winder, Psy.D., Amy Rinner-Clomburg, Psy. D., Amy Dickson, Psy.D.
LSUHSC Dept. of Psychiatry
LSU Health NEW ORLEANS School of Medicine
Introduction
Child neglect involves the failure of a caregiver to provide for the child's basic physical, emotional, and educational needs, which can lead to long-lasting physical, psychological, and developmental consequences.
The causes of neglect are multifaceted, with various socio-economic and psychological factors playing a significant role.
Neglect is more prevalent in families facing unemployment and economic instability (University of Oxford, 2017), given the increased parental stress and reduced emotional availability. Moreover, job loss and unstable income are linked to increased rates of depression, substance abuse, and domestic violence—all of which are risk factors for neglect .
Parental mental health disorders and adverse childhood experiences (ACEs) have also been found to contribute to risk for child neglect. Many mental health disorders are frequently rooted in ACEs, and can disrupt caregiving roles (Centers for Disease Control & Prevention, 2016)
Finally, substance use disorders (SUDs) have been found to disrupt parents' ability to properly care for children.
Despite research noting these risk factors for child neglect, there is a gap in research examining neglect in infancy within the child welfare system.
Therefore, understanding the factors that contribute to child neglect is essential to developing effective prevention and intervention strategies aimed at protecting vulnerable children and supporting at-risk families.
Research Hypotheses
Hypothesis 1: Unemployed parents will be more likely to have a child who experience child neglect as opposed to employed parents
Hypothesis 2: Parental mental health issues, particularly trauma-related disorders (e.g. PTSD), will predict neglectful practices as compared to other mental health issues
Hypothesis 3: Parental substance use disorders will be associated with child neglect as compared to parents without a substance use disorder
Methods
This study utilized a cross-sectional, observational design with existing data from the LSUHSC Infant Team that focused on families in which neglect was substantiated versus other forms of maltreatment.
A binomial logistic regression was used to test the association between neglect and parental employment status, mental health diagnoses, ACES, and substance use disorders.
Mental Health Diagnoses
Depression
Anxiety
PTSD
Bipolar
Schizophrenia
This research project was supported by Award Number: DBI-2341385 through the Nat
GeneBIORETS Program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Interferon-gamma Expression Increases in Senescent Immune Cells Following Stimulation of Peripheral Blood Mononuclear Cells
LSU Health NEW ORLEANS School of Medicine
A. Shridhar, P. M. McTernan, R.W. Siggins, K. Rodriguez-Graciani, P.E. Molina, D.A. Welsh, L. Simon
Introduction
Objective
Methods
Results
Assay Validation
Assay Validation: IFN-gamma Expression
IFN-gamma Expression in CD4 T Cells from Older Adults
Preliminary data indicates higher frequency of IFN-gamma in unstimulated CD4 cells in PBMCs from older adults with high alcohol use.
Discussion
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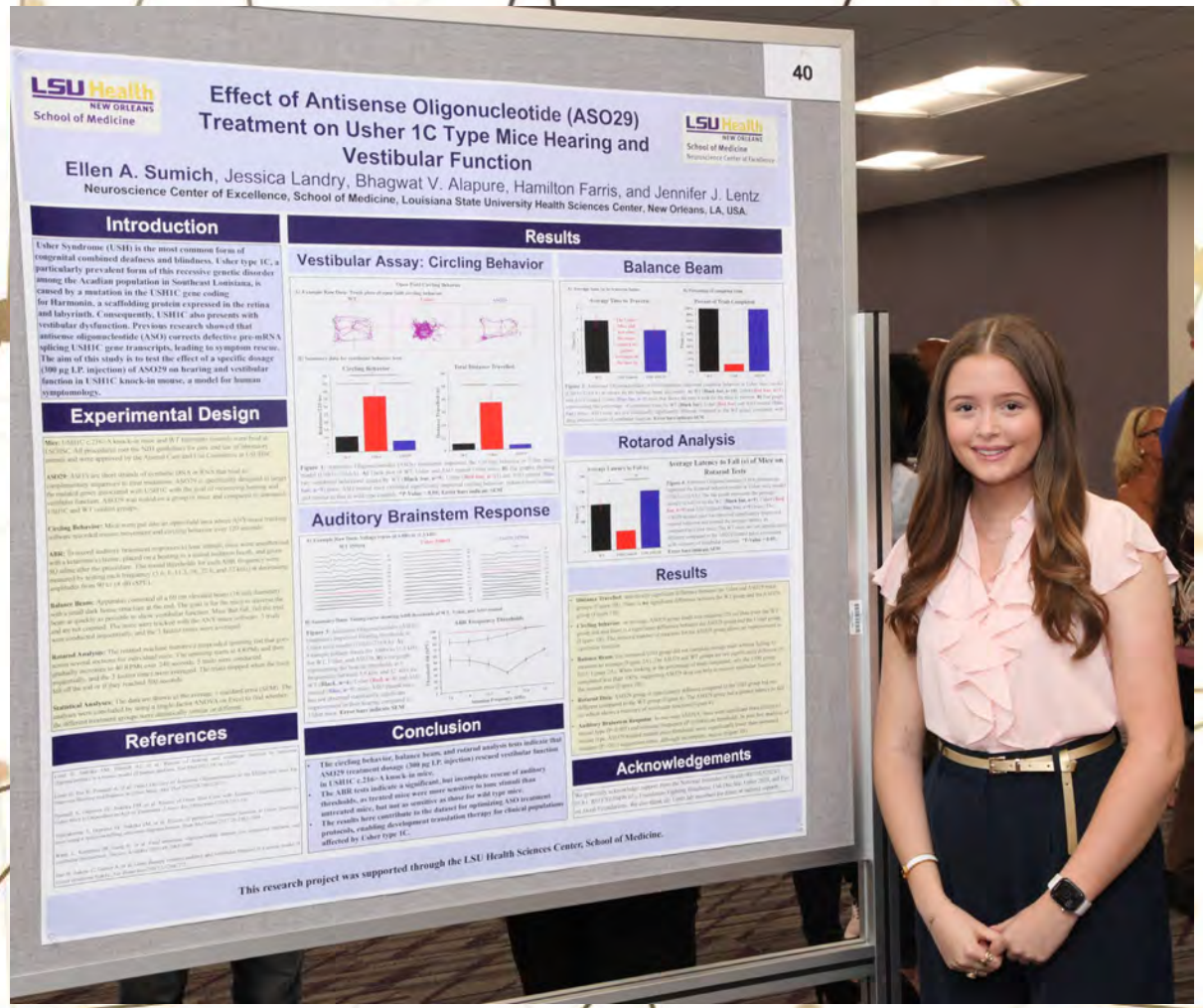
Acknowledgments
This research project was supported through the LSU Health Sciences Center, School of Medicine.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Effect of Antisense Oligonucleotide (ASO29) Treatment on Usher 1C Type Mice Hearing and Vestibular Function
LSU Health NEW ORLEANS School of Medicine
Ellen A. Sumich, Jessica Landry, Bhagwat V. Alapure, Hamilton Farris, and Jennifer J. Lentz
Neuroscience Center of Excellence, School of Medicine, Louisiana State University Health Sciences Center, New Orleans, LA, USA.
Introduction
Experimental Design
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Vestibular Assay: Circling Behavior
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Auditory Brainstem Response
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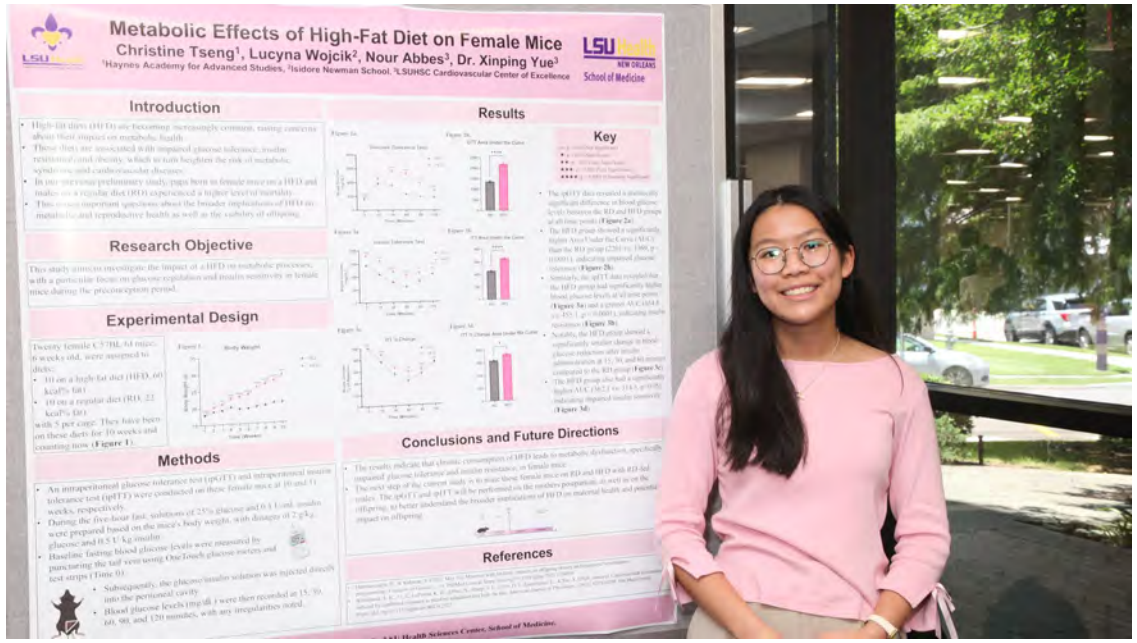
Acknowledgements
This research project was supported through the LSU Health Sciences Center, School of Medicine.


Metabolic Effects of High-Fat Diet on Female Mice
Christine Tseng[1], Lucyna Wojcik[2], Nour Abbes[3], Dr. Xinping Yue[3]
[1]Haynes Academy for Advanced Studies, [2]Isidore Newman School, [3]LSUHSC Cardiovascular Center of Excellence
LSU Health NEW ORLEANS School of Medicine
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Research Objective
Experimental Design
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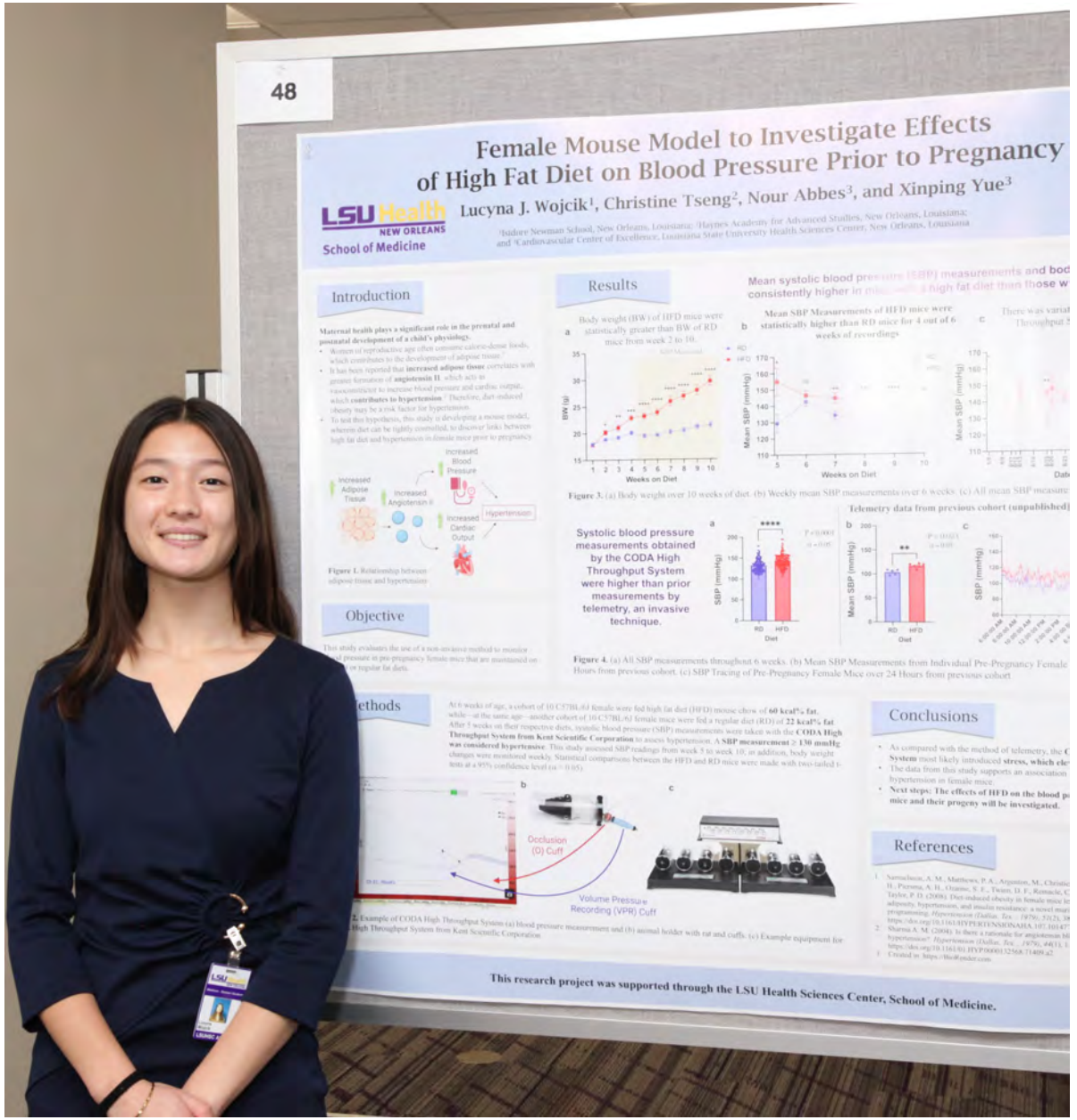
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Female Mouse Model to Investigate Effects of High Fat Diet on Blood Pressure Prior to Pregnancy
Lucyna J. Wojcik[1], Christine Tseng[2], Nour Abbes[3], and Xinping Yue[3]
LSU Health NEW ORLEANS School of Medicine
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Results
Objective
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References
This research project was supported through the LSU Health Sciences Center, School of Medicine.


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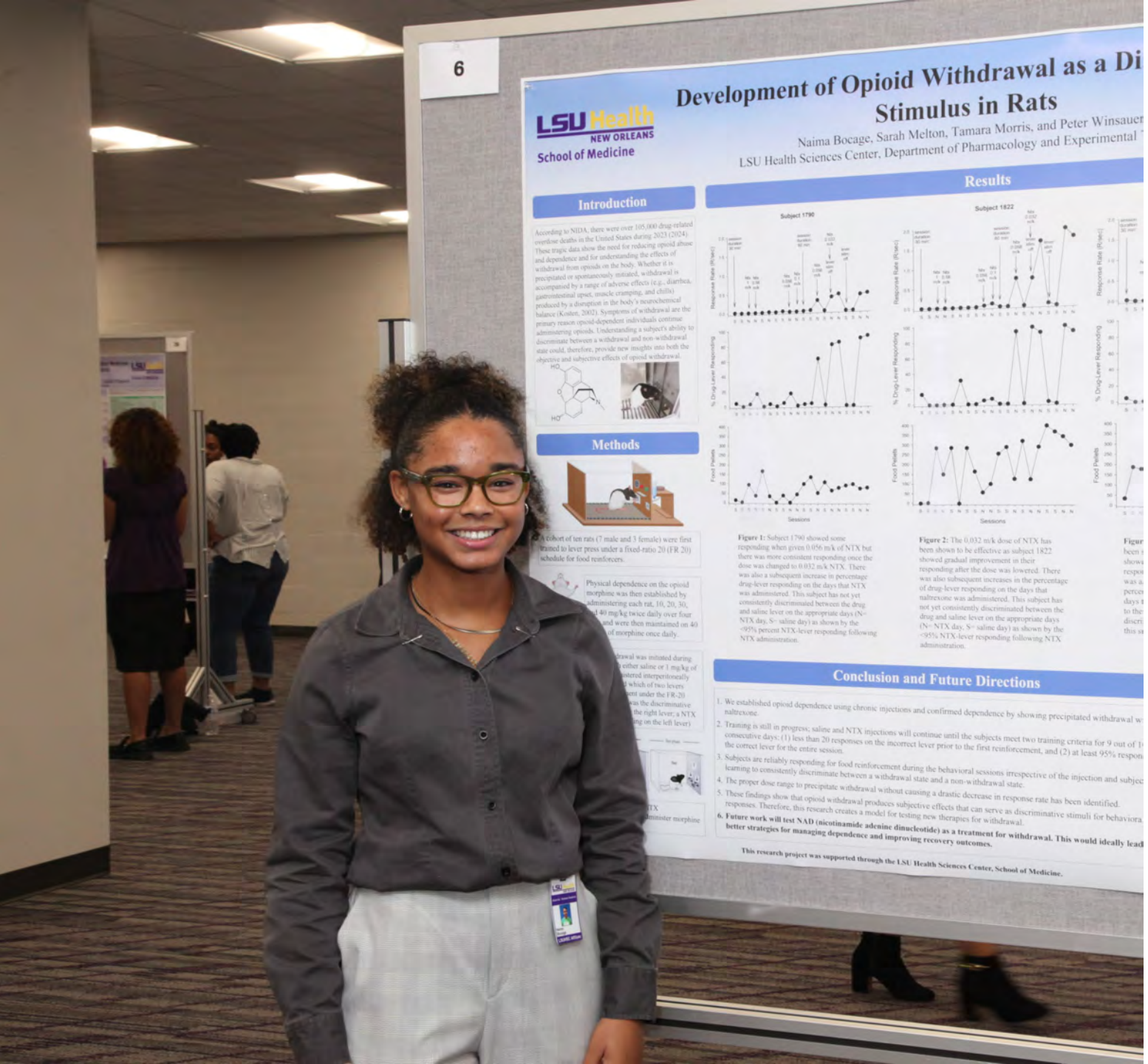
NEW ORLEANS
Certificate of Completion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Development of Opioid Withdrawal as a Di
Stimulus in Rats
LSU Health NEW ORLEANS
School of Medicine
Naima Bocage, Sarah Melton, Tamara Morris, and Peter Winsauer
LSU Health Sciences Center, Department of Pharmacology and Experimental
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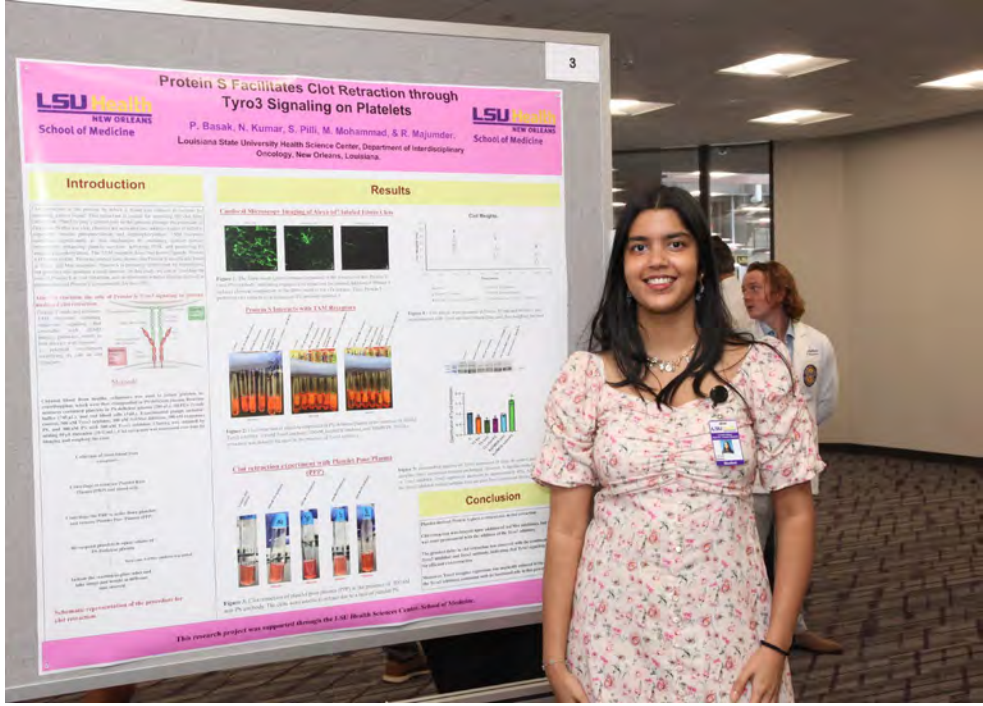
Results
Subject 1790
Subject 1822
Conclusion and Future Directions
This research project was supported through the LSU Health Sciences Center, School of Medicine.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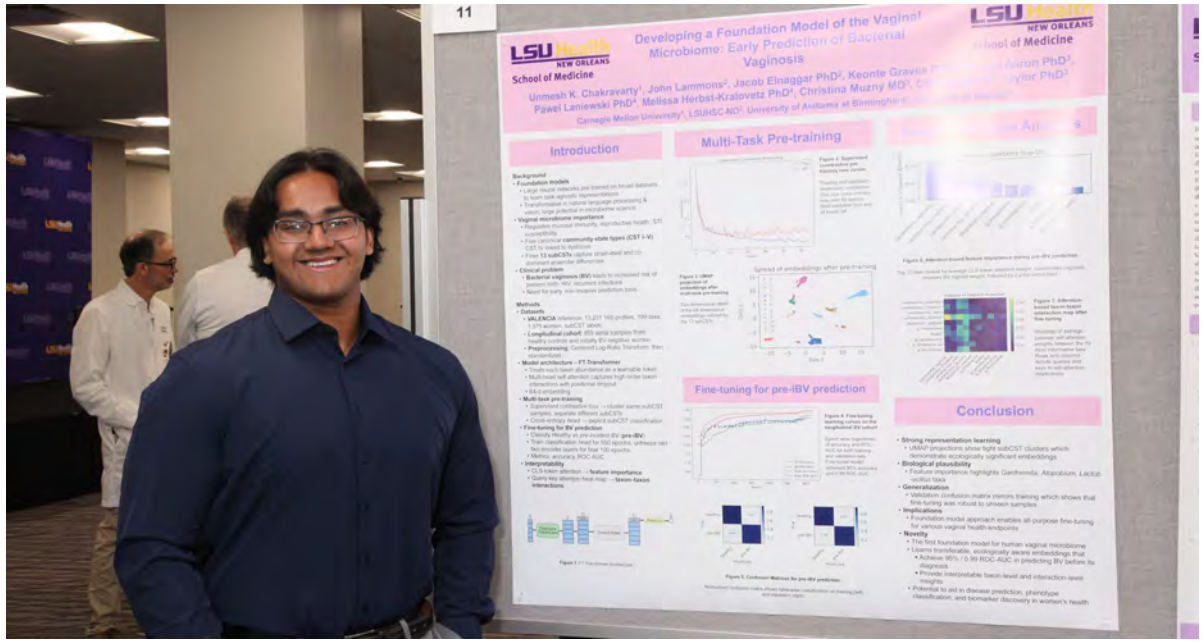
Protein S Facilitates Clot Retraction through
Tyro3 Signaling on Platelets
LSU Health NEW ORLEANS
School of Medicine
P. Basak, N. Kumar, S. Pilli, M. Mohammad, & R. Majumder.
Louisiana State University Health Science Center, Department of Interdisciplinary Oncology, New Orleans, Louisiana.
Introduction
Results
Conclusion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Developing a Foundation Model of the Vaginal Microbiome: Early Prediction of Bacterial Vaginosis
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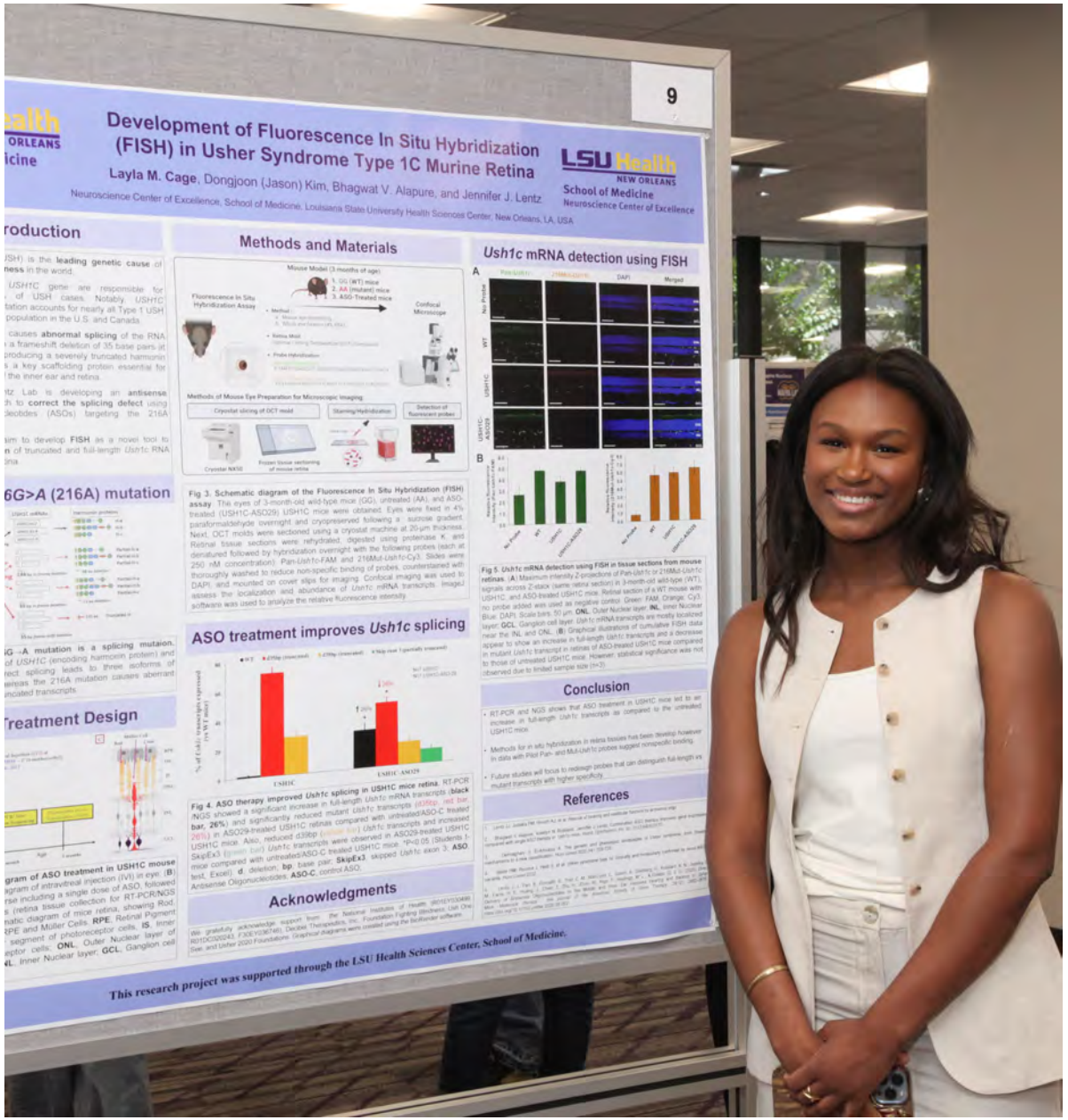
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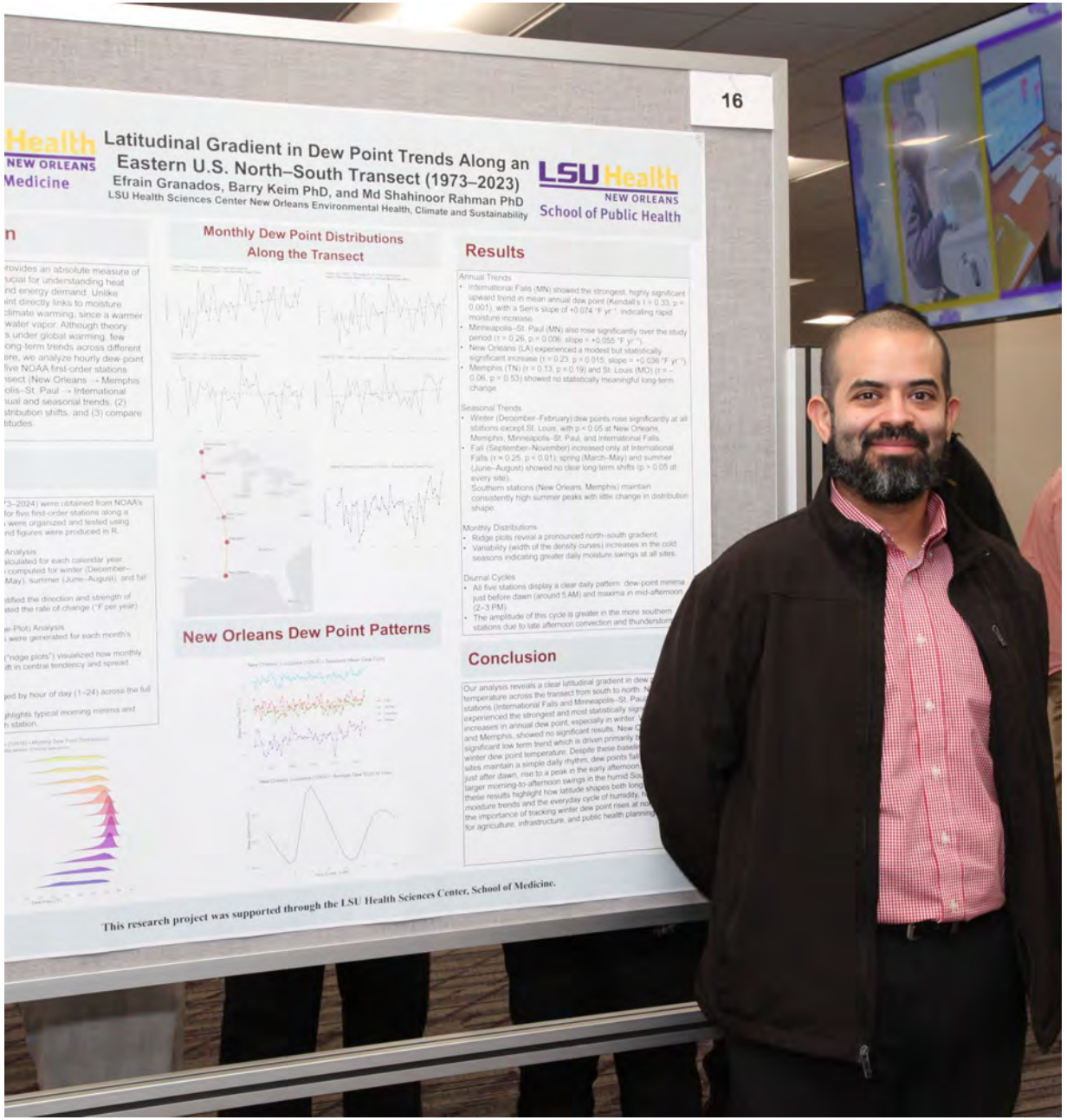
Development of Fluorescence In Situ Hybridization (FISH) in Usher Syndrome Type 1C Murine Retina
Layla M. Cage, Dongjoon (Jason) Kim, Bhagwat V. Alapure, and Jennifer J. Lentz
Neuroscience Center of Excellence, School of Medicine, Louisiana State University Health Sciences Center, New Orleans, LA, USA
School of Medicine
Neuroscience Center of Excellence
Methods and Materials
Ush1c mRNA detection using FISH
ASO treatment improves Ush1c splicing
Conclusion
References
Acknowledgments
This research project was supported through the LSU Health Sciences Center, School of Medicine.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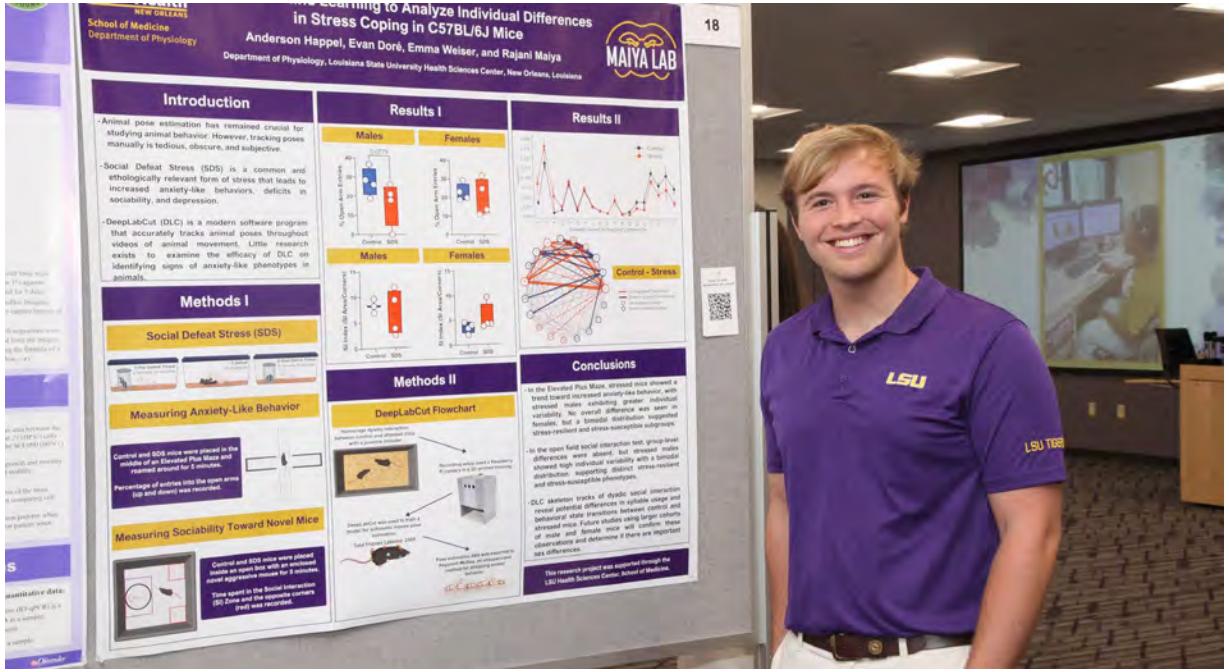
Latitudinal Gradient in Dew Point Trends Along an Eastern U.S. North–South Transect (1973–2023)
Efrain Granados, Barry Keim PhD, and Md Shahinoor Rahman PhD
LSU Health Sciences Center New Orleans Environmental Health, Climate and Sustainability
LSU Health NEW ORLEANS School of Public Health
Monthly Dew Point Distributions Along the Transect
Results
New Orleans Dew Point Patterns
Conclusion
This research project was supported through the LSU Health Sciences Center, School of Medicine.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in Stress Coping in C57BL/6J Mice
Anderson Happel, Evan Doré, Emma Weiser, and Rajani Maiya
Department of Physiology, Louisiana State University Health Sciences Center, New Orleans, Louisiana
MAIYA LAB
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Social Defeat Stress (SDS)
Measuring Anxiety-Like Behavior
Measuring Sociability Toward Novel Mice
Methods II
DeepLabCut Flowchart
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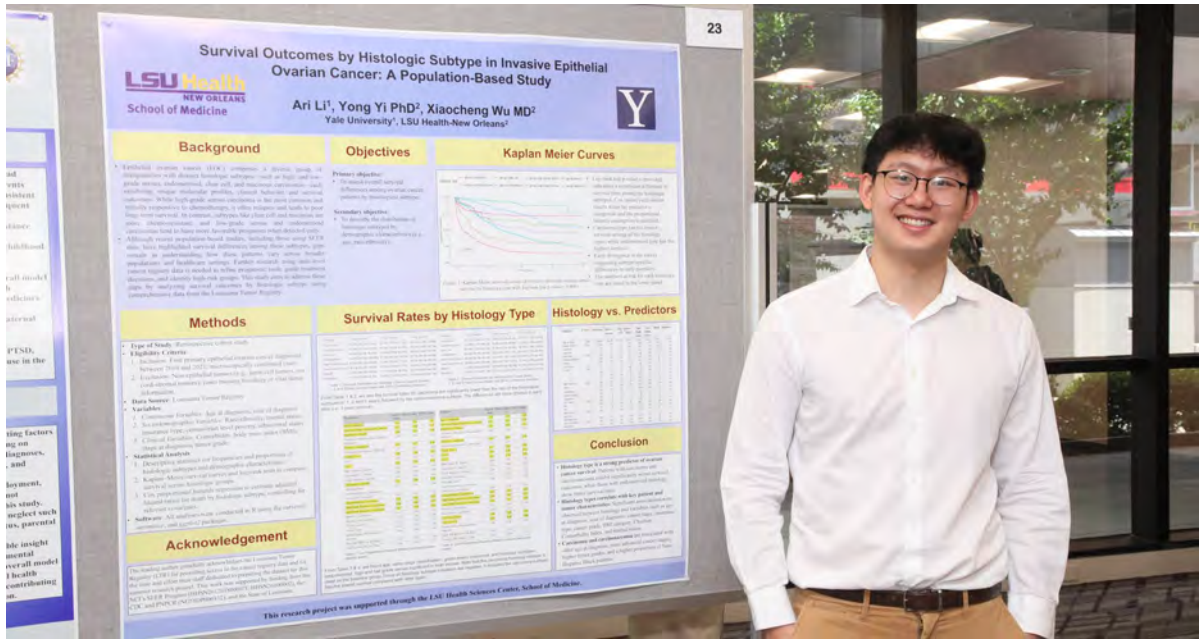
LSU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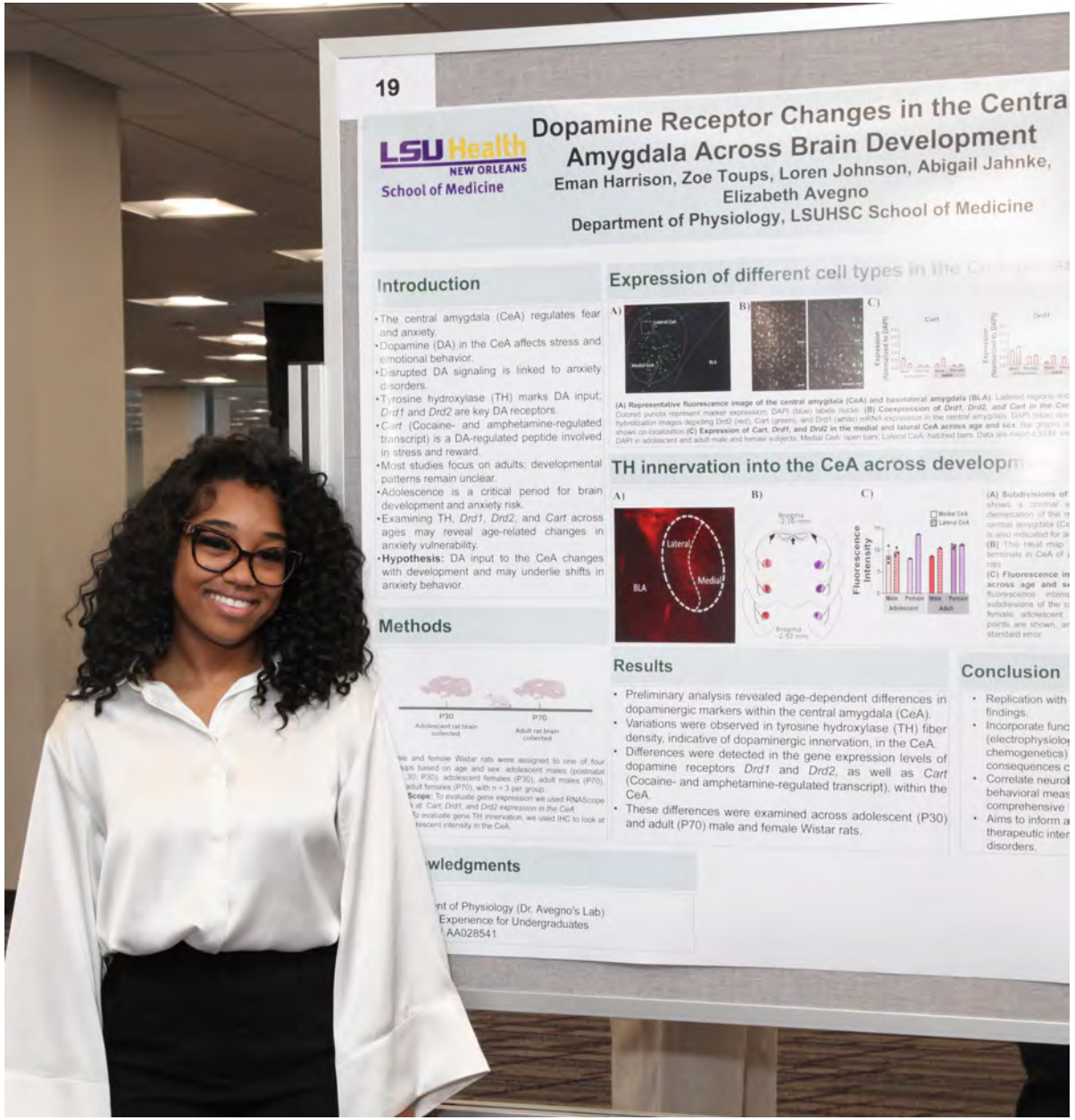
Survival Outcomes by Histologic Subtype in Invasive Epithelial Ovarian Cancer: A Population-Based Study
LSU Health NEW ORLEANS School of Medicine
Ari Li[1], Yong Yi PhD[2], Xiaocheng Wu MD[2]
Yale University[1], LSU Health-New Orleans[2]
Background
Objectives
Kaplan Meier Curves
Methods
Survival Rates by Histology Type
Histology vs. Predictors
Conclusion
Acknowledgement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LSU Health NEW ORLEANS School of Medicine
Dopamine Receptor Changes in the Central Amygdala Across Brain Development
Eman Harrison, Zoe Toups, Loren Johnson, Abigail Jahnke, Elizabeth Avegno
Department of Physiology, LSUHSC School of Medicine
Introduction
Expression of different cell types in the
TH innervation into the CeA across develop
Methods
Results
Conclusion
wledgments


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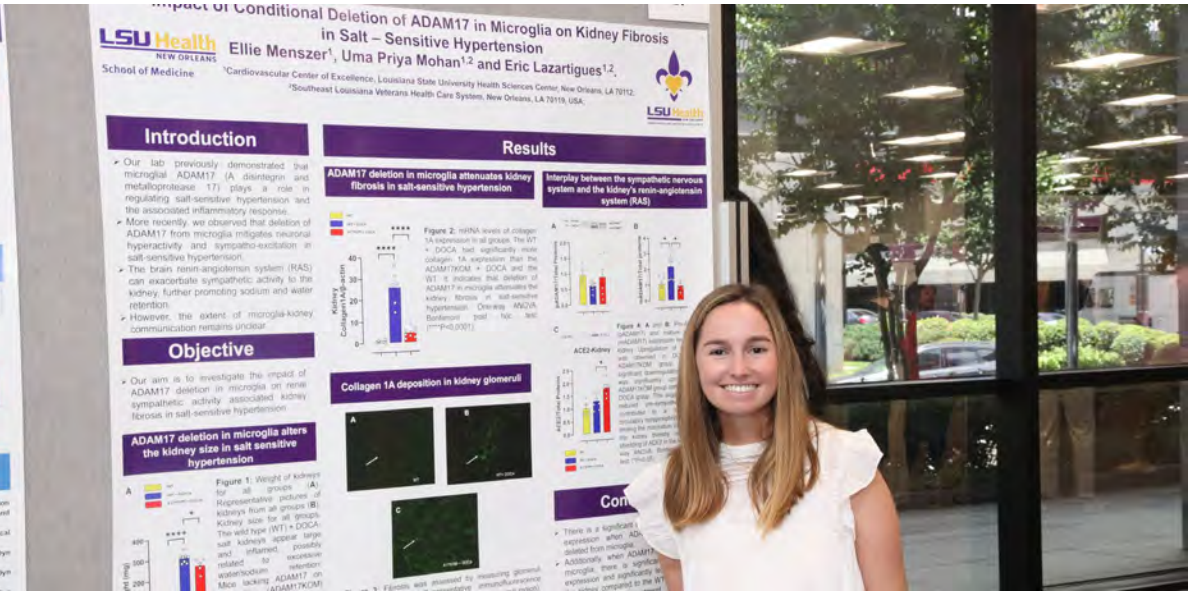
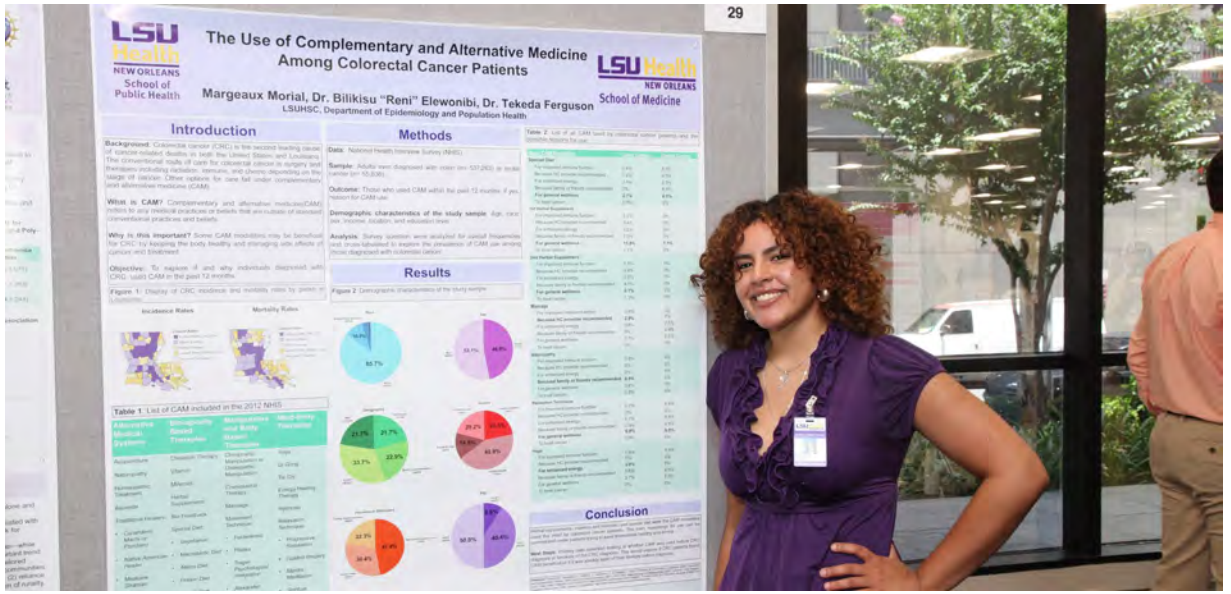
The Influence of Alcohol Consumption on Tobacco-related Cancer
Luke Schlegel
LSU Health New Orleans School of Medicine
All of Us Research Program
NIH
Introduction
Quantity x Frequency: Moderation of Tobacco
Conclusion
Key Results: Cancer & Risk Factors
Age & Sex: Older age and male sex were consistently linked to a higher risk of Tobacco-related cancer.
Tobacco's Clear Role: Independently, tobacco was a significant positive cancer risk (with alcohol considered).
Alcohol's Mixed Impact: Alcohol's independent effect on cancer varied; specific alcohol measures had insignificant varying effects.
Complex Interactions: Alcohol may moderate how tobacco affects cancer risk. Specifically, more frequent heavy drinking made tobacco's effect on tobacco-linked cancers less pronounced, suggesting a complex, non-additive relationship.
Methods
Objectives:
The primary objective of this study was to investigate alcohol's effect on the frequency of tobacco-related cancers.
The secondary objectives of this study was to investigate if estimates of total alcohol consumption (quantity x frequency) and/or episodic heavy drinking days specifically moderate the frequency of tobacco-related cancers.
Alcohol Classification:
Heavy Drinking Days: Moderation of Tobacco
Resources & More info


Impact of Conditional Deletion of ADAM17 in Microglia on Kidney Fibrosis in Salt – Sensitive Hypertension
LSU Health New Orleans School of Medicine
Ellie Menszer[1], Uma Priya Mohan[1,2] and Eric Lazartigues[1,2]
[1]Cardiovascular Center of Excellence, Louisiana State University Health Sciences Center, New Orleans, LA 70112;
[2]Southeast Louisiana Veterans Health Care System, New Orleans, LA 70119, USA.
Introduction
Our lab previously demonstrated that microglial ADAM17 (A disintegrin and metalloprotease 17) plays a role in regulating salt-sensitive hypertension and the associated inflammatory response.
More recently, we observed that deletion of ADAM17 from microglia mitigates neuronal hyperactivity and sympatho-excitation in salt-sensitive hypertension.
The brain renin-angiotensin system (RAS) can exacerbate sympathetic activity to the kidney, further promoting sodium and water retention.
However, the extent of microglial-kidney communication remains unclear.
Objective
Our aim is to investigate the impact of ADAM17 deletion in microglia on renal sympathetic activity associated kidney fibrosis in salt-sensitive hypertension.
ADAM17 deletion in microglia alters the kidney size in salt sensitive hypertension
Results
ADAM17 deletion in microglia attenuates kidney fibrosis in salt-sensitive hypertension
Interplay between the sympathetic nervous system and the kidney's renin-angiotensin system (RAS)
Collagen 1A deposition in kidney glomeruli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The Use of Complementary and Alternative Medicine Among Colorectal Cancer Patients
LSU Health New Orleans School of Public Health
LSU Health New Orleans School of Medicine
Margeaux Morial, Dr. Bilikisu "Reni" Elewonibi, Dr. Tekeda Ferguson
LSUHSC, Department of Epidemiology and Population Health
Introduction
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Results
Conclusion