



# 22<sup>nd</sup> Annual Capstone Conference



**Saturday, May 6, 2023**

**8:45AM -3:00PM**

**Bizzini Hall**

**University Honors Program**

**McNair Scholars Program**

**California State University Stanislaus  
One University Circle, Turlock CA 95382**

**(209) 667-3180**

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**| [csustan.edu/mcnair](https://csustan.edu/mcnair)**

## Acknowledgements

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### **The following faculty taught in the Honors Program this year:**

Hannah Abramson (English), Ralph Becker (Social Sciences), Ellen Bell (Anthropology), Juvenal Caporale (Ethnic Studies), Tom Carter (Computer Science), Dave Colnic (Political Science), Andrew Conteh (Political Science), Jim Cook (History), José Díaz-Garayúa (Geography & Environmental Resources), Kanwaljit Dulai (Biology), Katherine Filbert (Philosophy), Jeff Frost (Anthropology), Suditi Gupta (Psychology), Meggan Jordan (Sociology), Rene Mattos (English), Chris Nagel (Philosophy), Jamila Newton (Biology), Justin Pack (Philosophy), Kyra Pazan (Anthropology), Richard Randall (Political Science), Chad Redwing (Philosophy), Jennifer Ringberg (Anthropology), Kyle Stubbs (Comm. Studies), Elaina Tucker (Comm. Studies)

*Seniors in the Honors Program are encouraged to tackle complex problems using methods and knowledge drawn from relevant disciplines. Honors Program faculty and research mentors offer critical feedback and guidance along the way. The main objective is for students to explore, gather and analyze information effectively, and to reflect on the implications of what they have discovered. Group discussions help to promote thoughtful questioning. The goal is to communicate knowledge, judgments, and original perspectives based on careful inquiry, exploration and analysis.*

# 2023 Capstone Conference Schedule

Saturday – May 6, 2023

Senior Presentations - Bizzini Hall 102

8:45AM - 3:00PM

*Coffee Available in B-113*

8:45AM

Welcome & Opening Remarks

9:00-10:15AM

Senior Research Presentations

*\*15 Minute Break\**

10:30AM-11:30AM

Senior Research Presentations

*\*30 Minute Break\**

*Light Refreshments in B-113*

12:00-1:00PM

Senior Research Presentations

*\*15 Minute Break\**

1:15-2:30PM

Senior Research Presentations

3:00 PM

Conference concludes

# Senior Capstone Presentations

**9:00AM – 2:30 PM**

*Moderators: Dr. Nicole Cochran, Dr. Jamila Newton, Dr. James Tuedio,*

*Timekeepers: Celina Bridges / Jennifer Frisk*

*Coordinator: Kirstin Halstead*

9:00-9:15 AM:

**Lara Al-Jaser, Monica Montenegro, Gianna Nunes, Asha Nair, Jacqueline Villasenor-Ramirez** (Public Health Promotion): A Mixed Methods Study Of The Stanislaus State Community's Perception And Behaviors Of Nicotine And Tobacco Use And Disposal

**Faculty Mentor:** Dr. Meggan Jordan and Dr. José Díaz-Garayúa

9:15-9:30 AM:

**\*Daniel Pasillas-Pablo** (Public Health Promotion): Associations Between Psychosocial Stressors And Nicotine, Cannabis Use In Ethnically Diverse Emerging Young Adults

**Faculty Mentor:** Dr. Wura Jacobs

9:30-9:45 AM:

**Mackenzie Creamer** (Psychology): The Impact of Stress on Opioid Addiction

**Faculty Mentor:** Prof. Suditi Gupta

9:45-10:00 AM:

**Maya Young** (Sociology): A Hidden Epidemic: Domestic Violence and Resource Accessibility During the COVID-19 Pandemic

10:00-10:15 AM:

**\*Cristian Silva-Toro** (Psychology & Criminal Justice): Criminal Justice or Public Health: An Analysis of California Central Valley's Approach to Drug Addiction

**Faculty Mentor:** Dr. Sebastian Sclofsky

## ***15 Minute Break***

10:30-10:45 AM:

**Joseph Lao** (Public Health Promotion): The Effects and Impacts of Subliminal Affirmations on the Subconscious

**Faculty Mentor:** Prof. Suditi Gupta

10:45-11:00 AM:

**Nina Lydon** (Psychology): The Efficacy of Music on Emotional Wellbeing

**Faculty Mentor:** Dr. Andrea Duroy

11:00-11:15 AM:

**Madison Wingate** (Psychology): Defining Minimalism and Exploring its Effects on Well-Being

**Faculty Mentor:** Prof. Suditi Gupta

11:15-11:30 AM:

**Angela Esau** (Fine Art): How Does Sharing Artwork on Social Media Affect Artists and Their Artwork?

**Faculty Mentor:** Dr. Staci Scheiwiller

**30 Minute Break**  
*Light Refreshments in B-113*

12:00 -12:15PM:

**Paola Viviana Campos** (Mathematics): Responsibility in the Math Classroom and its Correlation with Mathematics Anxiety

**Faculty Mentor:** Dr. Jungha An

12:15PM -12:30 PM:

**Isabel Gaddo** (Biology): The Relationship between Covid-19 Related Stress and Fatigue

**Faculty Mentor:** Georget Oraha

12:30-12:45 PM:

**\*Edith Herrera** (Sociology): Gendered Attitudes and Beliefs Among Latinx Youth

**Faculty Mentor:** Dr. Jennifer Whitmer

12:45-1:00 PM:

**\*Melissa Nallely Rubio** (Spanish and Psychology): Fluency vs. Literacy in Multilingual College Students in the Central Valley

**Faculty Mentor:** Sandra García Sanborn

**15 Minute Break**

1:15-1:30 PM:

**\*Raymond Duenas** (Mathematics and Computer Science): Climate Change Analysis and Datasets Derived Through Computer Vision

**Faculty Mentor:** Dr. Kyu Han Koh

1:30-1:45 PM:

**Christian Gerard Capuno** (Biological Sciences): AAV-Induced Upregulation of Aquaporin-4 Expression as a Means of Bolstering Beta-Amyloid Oligomer Eflux

**Faculty Mentor:** Dr. Jamila Newton

1:45-2:00 PM:

**Sherly Yaghoubi** (Computer Science and Math): Hidden Markov Models on DNA Sequencing Data

**Faculty Mentor:** Dr. Jessica De Silva

2:00-2:15 PM:

**Delton Boswell** (Computer Science): EV Charging Desert: The Challenges with Electric Vehicle Charging in East Modesto

**Faculty Mentor:** Dr. Jessica De Silva

2:15-2:30 PM:

**\*Heather D. Collins** (Anthropology): Ethnogeology and Interdisciplinary Approaches

**Faculty Mentor:** Dr. Ryan I. Logan

**\*Denotes McNair Scholars**

# Junior Research Poster Sessions

## 9:00AM – 1:35PM

*Moderators: Dr. Ellen Bell, Dr. Andrew Conteh*

*Timekeepers: Jennifer Frisk / Celina Bridges*

*Coordinator: Kirstin Halstead*

9:00-9:05 AM:

**\*Cecilia Alvarez** (Biological Sciences): Xylene bridged Organosilica nanotubes as catalyst for the synthesis of Cinnamic acid

**Faculty Mentor:** Dr. Amanpreet Manchanda

9:05-9:10 AM:

**Victoria Bizzanelli** (Chemistry): 2,4,6-trichloroanisole detection with chemosensors

**Faculty Mentor:** Dr. Stone

9:10-9:15 AM:

**\*Jose Aguirre III** (Biological Sciences): Testing the relative efficacy of lytic bacteriophages or cocktails on treating *Xanthomonas campestris* pv. *campestris* in vitro.

**Faculty Mentor:** Tricia Van Larr; Andrew Gardner

9:15-9:20 AM:

**Justin Raymond** (Biology): Flower Color and their selective pressures

9:20-9:25 AM:

**\*Sharlien Bernadet Envieh** (Agriculture): Conventional vs Agroecological Way of Growing Strawberries

**Faculty Mentor:** Dr. Chantelise Pells

9:25-9:30 AM:

**Taylor Blea** (Biology): The production of spider silk and expression of spider silk proteins in practical applications

9:30-9:35 AM:

**Angeles Christina Ramirez** (Biology) How does access to vision healthcare, in affordability, proximity, and number of options, affect the rate of treatment of frequently occurring or existing, treatable vision conditions?

**Faculty Mentor:** Prof. Suditi Gupta

### ***35 Minute Break***

10:00-10:05 AM:

**Megan Gillen** (Psychology): Does eye movement desensitization reprocessing (EMDR) improve symptoms of suicidal ideation in those affected by Post Traumatic Stress Disorder (PTSD)

**Faculty Mentor:** Prof. Suditi Gupta

10:05-10:10 AM:

**Carolyn Gallella** (Psychology): Effects of diagnosing mental illness self-labelers

**Faculty Mentor:** Aletha Harven

10:10-10:15 AM:

**\*Lu Aguiniga** (Psychology): Self-talk and Behavior

**Faculty Mentor:** Shannon Bianchi

10:15-10:20 AM:

**Lucas Azevedo** (Psychology and Music Technology): Screen time and GPA

**Faculty Mentor:** Prof. Suditi Gupta

10:20-10:25 AM:

**Silvia Lemus** (Psychology): Selfies and their effects on self esteem

### ***35 Minute Break***

11:00-11:05 AM:

**\*Nathalie Michelle Hernandez** (English): Analyzing Attitudes & Performance from Learning Methodologies In English Language Learners in Higher Education Classrooms

**Faculty Mentor:** Dr. Mirta Maldonado

11:05-11:10 AM:

**Jasmine Martinez** (Exercise Science): The effects of food insecurity on college student academic performance

11:10-11:15 AM:

**\*Mahmoud Sulieman** (Mathematics): Creating a webpage for Simplex Method calculation

**Faculty Mentor:** Dr. Jessica De Silva

11:15-11:20 AM:

**\*Dylan John Hoyt** (English SSMP): Let the Robots do the Homework!: A Progressive Study in AI Infused Curriculum

**Faculty Mentor:** Jennifer Pace Wittman

11:20-11:25 AM:

**Sarah Everingham** (Instrumental Education): Importance of Cultural Representation in Music Classrooms

**Faculty Mentor:** Dr. Sarah Minette

11:25-11:30 AM:

**Kaylee Kinst** (Anthropology): Social norms in animals

11:30-11:35 AM:

**Alexander C. Ayers** (Geography and Environmental Resources): The Ripple Effects of Framing: Explicit Terms and Co-occurrence in California Water Futures Market Media Representations

**Faculty Mentor:** Dr. Allison McNally

11:35-11:40 AM:

**Jasmine Butler** (Child Development): How is Education Made Accessible to Underserved Children?

### ***20 Minute Break***

*Light Refreshments in B-113*

12:00-12:05 PM:

**Robert Sims Wikoff** (Business Administration): Neural Networks and Business or Neural Networks and Analogue Computation.

**Faculty Mentor:** Dr. Tom Carter

12:05-12:10 PM:

**Jillian de la Motte** (Communication Studies): A study into the effects that ADHD has on Communication

12:10-12:15 PM:

**Paulina Bennett** (Psychology): COVID P-19s impact on attachment styles

**Faculty Mentor:** Prof. Suditi Gupta

12:15-12:20 PM:

**Julie Diaz** (Developmental Psychology): Take It Easy On Us: The Effect of the COVID-19 Pandemic on the Quality of Well-Being and Academic Achievement of College Students

**Faculty Mentor:** Deborah Foster

12:20-12:25 PM:

**Ashley Cabral** (Nursing): Systemic Factors That Contributed to Nurse Burnout in the Pandemic

**Faculty Mentor:** Brandy Gleason, MSN, MHA, PHN, BC-NC

12:25-12:30 PM:

\***Celina Bridges** (Sociology, Gerontology Minor): Ageism & COVID-19: A war of Perception

**Faculty Mentor:** Dr Della Winters

12:30-12:35 PM:

\* **Summer Anderson** (Psychology): Research shows steady decline in importance of religion in one's life from the Greatest generation to generation Z; how will this shape the future political landscape in the United States?

**Faculty Mentor:** Deborah Forester

### ***25 Minute Break***

1:00-1:05 PM:

**Alyssa Beltran** (History): The Effectiveness in Monarchies Today?

**Faculty Mentor:** Erin Hughes

1:05-1:10 PM:

**Ruben Marquez Jimenez** (Political Science and Spanish): The Bracero Program

1:10-1:15 PM:

**Tiffany Williams** (Psychology): Nationalized Mental Health Care

**Faculty Mentor:** Suditi Gupta

1:15-1:20 PM:

**Chanta Mon** (Criminal Justice): A Journey to homelessness living in poverty.

**Faculty Mentor:** Prof. Sudita Gupta

1:20-1:25 PM:

\***Jayden Nadine Lopez** (Criminal Justice): The Disadvantages of the United States



having the highest incarceration and recidivism rates

**Faculty Mentor:** Jason Pourtauerdi

1:25-1:30 PM:

**Hailey Borchardt** (Political Science): The Eighth Amendment: Crime v. Punishment

1:30-1:35 PM:

\* **Sinaí Cecilia Arenas Solorio** (Psychology): Empathy, Aggression, and Symptoms of PTSD as it Relates to Police Brutality

**Faculty Mentor:** Deborah Forester

**\*Denotes McNair Scholars**

## **Abstracts of Senior Capstone Presentations**

### **A Mixed Methods Study of the Stanislaus State Community's Knowledge and Behaviors Surrounding Tobacco/Nicotine**

Lara Al-Jaser, Monica Montenegro, Gianna Nunes, Asha Nair, Jacqueline Villasenor-Ramirez

Tobacco and nicotine have undeniable adverse health effects, making it one of public health's greatest epidemic threats. The chemicals present in tobacco product waste (TPW), carcinogenic nitrosamines, formaldehyde, heavy metals, and various other toxicants, have the potential to leach from cigarette butts and eventually bio-accumulate in the human food chain. To effectively prevent and control tobacco-related health disparities, various points of intervention are required—a critical point being college students. As students of California State University, Stanislaus, we created our study with the goal of exploring the CSUS campus community's tobacco/nicotine use and disposal, perceptions of use, and level of tobacco-related environmental knowledge. The ACHA III provides data on tobacco and nicotine usage for the students at California State University, Stanislaus (CSUS), however, there is no data available that includes CSUS faculty and staff. Additionally, our study intends to examine additional variables such as LGBTQ+ status, familial immigration status, age, and geographical location. We conducted a mixed methods study that included unobtrusive participant observations at multiple CSUS campus locations alongside an online survey. Our tentative findings show people visiting the CSUS campus are rarely smoking in the places we observed and the smoking that does occur mainly happens on the

outskirts of campus. We did not observe any TPW disposal behaviors. When compared to their peers, community members, and strangers, most survey respondents were most concerned with their family's tobacco use.

### **EV Charging Desert: The Challenges with Electric Vehicle Charging in Modesto California**

Delton Boswell

As the popularity of electric vehicles (EVs) increases, it's become clear that some regions are struggling to keep up with EV charging infrastructure. Stanislaus County in California's Central San Joaquin Valley is one such region, lacking a significant number of public EV charging stations. This research project explores proactive measures that Stanislaus County and by extension, the City of Modesto, can take to improve its public EV charging infrastructure. Given limitations in power infrastructure and cost, the optimal placement of charging stations is crucial. This project identifies the optimal travel routes to projected EV charging infrastructure in East Modesto based on a Python programming model using local census data. The goal is to ensure future public charging infrastructure is evenly distributed across the region, providing reasonable travel distances to public EV charging stations for all residents.

### **Responsibility in the Math Classroom and its Correlation with Mathematics Anxiety.**

Paola Viviana Campos

Responsibility is an important component of the mathematics learning process that enables students to become more active participants in the mathematics classroom. In recent years, educators have acknowledged the unique power distribution in the classroom, wherein students are often passive participants in the learning process (Eva, 2017). Consequently, research in education has focused on developing and studying the effects of alternative teaching models, such as the gradual release of responsibility model, that are more student-centered (Webb et al., 2019). Alternatively, expanding on Emerson's (1962) power-dependence theory, student's can gain more control in the learning process by assuming more responsibility for their learning. In this exploratory study, we analyze student and teacher responsibility in the mathematics classroom and the potential correlation between student responsibility and feelings of mathematics anxiety. For this study, 5 math teachers and 100 students from both advanced and regular math classes from a public high school in Stanislaus County in California were surveyed using a mixed research design that gathered both qualitative and quantitative data. Student and teacher responsibility were measured using preliminary Likert-type scales created for this study. Mathematics anxiety was measured using Mahmood and Dr. Khatoon's (2011) Math Anxiety Scale (MAS). Preliminary results indicate there is a difference in perceptions of student responsibility

between advanced and regular math students. Results also imply mathematics anxiety may be negatively correlated with student perceptions of responsibility. Ultimately, results reveal responsibility in the mathematics classroom is a complex concept requiring additional analysis

### **Ethnogeology: Interdisciplinary Studies of Indigenous Knowledge**

Heather D. Collins

Ethnogeology is the study of the valid scientific observations that are incorporated and reflected within Indigenous knowledge of geological features and processes. However, despite the perspective that is implied with the ethno-, most of the work being done in this small subfield is being conducted by geologists and geoscientists. It is lacking is the anthropological perspective and holistic approach that I believe is necessary for future studies of ethnogeology. Through an integrative literature review, utilizing an interdisciplinary approach, I aim to demonstrate the ways in which various fields may have already contributed to the field of ethnogeology, and the degree to which interdisciplinary models are being utilized. I also advocate for the continued necessity of the inclusion of Native voices in these bodies of work.

### **The Impact of Stress on Opioid Addiction**

Mackenzie Creamer

Nationally and Internationally opioids have reached new heights in usage and death rates. Previous research has indicated that stress plays a role in addiction and relapse vulnerability, however, the extent of discussion of the interrelatedness between stress and drug addiction is underdeveloped. The intersection of these topics, as they span multiple fields, needs to be further examined and addressed in order to develop educational advancements, as well as new treatment approaches. Therefore, I pose the question: What is the impact of stress on opioid addiction? I have focused my research and analysis on relevant peer reviewed articles within these topic spheres, narrowing searches based on specific inclusion criteria. I have predicted that stress will be championed as the critical factor in addiction and its related components. To this end, I thoroughly examined the data in order to create a clear composite model of stress and addiction.

## **How Does Sharing Artwork on Social Media Affect Artists and Their Artwork?**

Angela Esau

The purpose of this research is to find the effects placed upon artists and their artwork by using social media as a platform to share said artwork. Artists are to promote themselves and their work throughout their career in order to gain employment and a larger audience. In today's world, social media seems to be an effective way to do so, with virtually instant results and the ability to reach out to different parts of the world simultaneously. However, using social media comes with many serious risks, such as exploitation, cyberbullying, and others due to how social media functions. Through literary analysis of artist manuals and existing research articles relating to art and to social media, it was found that, although social media could pose a risk to one's safety and productivity, it could be beneficial, especially as a tool of self-promotion. A survey released to the art department of CSU Stanislaus found that social media was also generally beneficial; artists who reported using social media to share their artwork felt that it helped them reach a broader audience and helped them become better artists without a significant increase in stress. Artists who did not use social media to share their artwork did not report significantly less stress than those who did, but they also sold less work than those who did. In conclusion, using social media to share artwork affected artists and their artwork in a positive manner, but not very significantly. It should be noted that these participants are students and are only beginning their careers.

## **The Relationship Between COVID-19 Related Stress and Fatigue**

Isabel Gaddo

The Coronavirus pandemic that started in 2019 has affected the world in a variety of ways. In March of 2020, colleges and universities switched to remote learning to keep everyone safe and protected from the pandemic. The levels of uncertainty as well as stressors from the pandemic itself had caused an increasing amount of stress. Stress can affect students in a variety of ways including having impacts on physical well-being. To my knowledge, little to no studies have focused on how pandemic related stress impacts college student's physical well-being. For this project, I investigated the relationship between Covid-19 related stress and fatigue. California State University Stanislaus's students' stress levels were assessed using the COVID-19 Student Stress Questionnaire. The Multidimensional Fatigue Inventory (MFI), was used to assess five different dimensions of fatigue. These results were used to determine the correlation between stress and fatigue of students during the pandemic. It was found that there was no significant correlation between stress and fatigue due to the COVID-19 pandemic. When comparing the stress levels of women and men, on average women had higher levels of stress. When comparing the fatigue levels of women and men, on average women had higher levels of fatigue. It was also found that students that had difficulty with technology during the pandemic had higher levels of

stress. Although there was no correlation between stress and fatigue, future studies should investigate stress level and fatigue level differences between different majors.

## **AAV-Induced Upregulation of Aquaporin-4 Expression as a Means of Bolstering Beta-Amyloid Oligomer Efflux**

Christian Gerard Capuno

Alzheimer's Disease is a terminal illness which accounts for 60-80% of all cases of dementia; despite this, there are no effective treatments/cures, only "disease-modifying drugs" which temporarily delay the largely invariable prognosis. In 2012, the work of Iliff et al. discovered a (pseudo-lymphatic microglia-dependent) nonspecific metabolite waste clearance system hence termed the "glymphatic system". Further research into this system's involvement in neurodegenerative pathologies implicated this system as a principal actor in proper brain metabolite flux, and its sleep-dependent, aquaporin-4 (AQP4)-facilitated "washing" was found to be paramount in maintaining proper synaptic function. Loss of glymphatic functionality, due to AQP4 dysfunction or otherwise, led to the exacerbation of aggregate-related neurodegenerative disorders such as Alzheimer's Disease or amyotrophic lateral sclerosis (ALS) and effecting in systemic neural failure, cognitive decline, and more rapid neurodegeneration than in functional glymphatic system controls. Although the pathological consequences of glymphatic failure have been extensively characterized, there is as yet no research investigating whether glymphatic supplementing procedures may yield a neurologically protective effect. Therefore, reinforcing the glymphatic system's functional longevity, such as through upregulation of AQP4 expression/polarization, is a logical step in the evaluation of potential therapeutic avenues against neurodegenerative diseases, especially in the context of under-studied biological pathways. We thereby intend to utilize murine models of Alzheimer's Disease and an adenoassociated virus (AAV) vector hybridized with a copy of the AQP4 gene in order to evaluate the risk-benefit balance between the clinical efficacy of this procedure and its potential complications.

## **Gendered Attitudes and Beliefs Among Latinx Youth**

Edith Herrera

This research will focus on comparing the gender ideologies of Latinx youths with their parents. In semi-structured interviews with ten participants, we found that Latinx youths have less traditional gender ideologies than their parents. Even though these parents are resisting the changes with stereotypical beliefs like "machismo" and "machista," they were not as strong and enforced as their own parents (youths' grandparents). This research will also involve how parents are shaped by their children. This suggested that Latinx youths are more likely not to follow these gendered ideologies but constantly challenge their

parents' ideologies. We anticipate that there will be some traits and values that youths will follow that their parents taught them, but they will reject the roles of “machismo” and “marianismo.” This research will demonstrate if Latinx youths will follow the gender beliefs of “machismo” and “marianismo” that their parents implemented in their childhood. We will see if the youths intend to continue the roles of “machismo” or “marianismo” as part of their beliefs once they form a family in the future or have the same beliefs. We will discuss whether youths have seen stereotypes in their household and how they react to them. We will also compare and contrast the youths' responses to their parents' question if “Did your parents follow the gender roles like your father being “machista” or mother being “marianista?”

### **The Effects and Impacts of Subliminal Affirmations on the Subconscious**

Joseph Lao

Subliminal affirmations are recognized as hidden messages through the uses of audio or imagery, much akin to advertisements. These affirmations can also be remotely compared to how music affects individuals, in the sense that we are directly or indirectly persuaded around the concept of the theme being expressed through auditory stimulations, and then desire the theme that's being presented. The use of subliminal affirmations themselves have been met with controversy over their actual uses and, as such, are met with individual bias on their effectiveness. Many theories within psychology discuss the baseline and identification towards the unconscious mind itself, however for this research study, theories such as Sigmund Freud's Theory of the Subconscious Mind and Carl Jung's theory on The Collective Unconsciousness will be the main theories supporting this research study. The reason being is that both of these theories' main focus are derived on the analysis of the inner workings towards the subconscious/unconscious mind. I have reviewed many articles that identify the uses of subliminal affirmations and previous recorded impacts in which certain environmental and individual factors are prevalent in subliminal affirmations having an impact, and have discussed whether there is an untapped area that these affirmations hold. The purpose of this research is to analyze how significant subliminal affirmations and whether their uses are versatile enough to be used within different environments.

### **Associations Between Psychosocial Stressors and Nicotine, Cannabis Use in Ethnically Diverse Emerging Young Adults**

Daniel Pasillas-Pablo

Psychosocial stressors such as adverse childhood experiences (ACEs), everyday discrimination, and concern of social hostility are emerging as influential on health behavior. Said stressors have not been evaluated for influence on maladaptive behaviors

like substance use. This study examined racial/ethnic differences in associations between psychosocial stressors with the use of tobacco, nicotine, and cannabis products between minority young adults and their non-minority counterparts. Cross-sectional data collected from the Happiness and Health Study was used to classify participants as either racial minority (RM) or non-racial minority (RNM); additionally, their self-reported responses on past 6-month substance use and scale measures scores for psychosocial stressors were analyzed in SPSS (v. 28) using stratified multivariate regression models. In a sample of 2,207 participants, RM young adults who experienced everyday discrimination saw increased odds of cigarette use, and social concern increased odds of cannabis vaping. NRM young adults experience of ACEs increased odds of cigarette smoking e-cigarette use, cannabis smoking, and cannabis vaping; however, everyday discrimination increased odds of e-cigarette use, and social concern increased odds of cannabis smoking and vaping. Culturally sensitive tobacco and cannabis product use interventions that acknowledge childhood trauma would be beneficial to maladaptive substance use.

### **Fluency vs. Literacy in Multilingual College Students in the Central Valley**

Melissa Nallely Rubio

As the title implies, the sole focus of this research is to measure and record the percentage of the fluency and literacy skills of multilingual college students in the Central Valley with the intent to reveal that the constant English speaking environment does compete with their native and learnt foreign languages. Due to a constant English speaking environment within the education system, workforce and social networks, a student's literacy skills in their native and learnt foreign languages will significantly demonstrate a decrease in comparison to their literacy skills in the English language due to a lack of need and practice of literacy skills in these foreign languages. Their fluency skills on the other hand, may not seem as affected because conversation is generally much easier to convey due to repetition of common and useful words and phrases. With the aforementioned, both the existence of culture and language are codependent of each other, therefore, it is inevitable to avoid culture when learning or speaking a language. Whether it is a native or learnt foreign language, to maintain a culture aflame it is required to keep the language alive. With the data collected from this research, I hope to promote and motivate my participants and audience to continue to hone and learn the languages of their interest and culture because we are to celebrate variety, not uniformity.

### **Defining Minimalism and Exploring its Effects on Well-Being.**

Madison Wingate

I hypothesized that after extensive research, I would discover that Minimalism, while a great tool for increasing well-being, is poorly defined and therefore misunderstood. I have

proposed a new definition which is: a form of intentional living that seeks to reduce various forms of consumption that are negatively impacting the consumers life. Well-being is defined by the American Psychological Association (APA) as “A state of happiness and contentment, with low levels of distress, overall good physical and mental health and outlook, or good quality of life.” I found that minimalism does have an effect on well-being. Ultimately, the purpose of this research is to encourage further research as a means of encouraging a new solution to increase well-being across diverse communities.

## **Hidden Markov Models on DNA Sequencing Data**

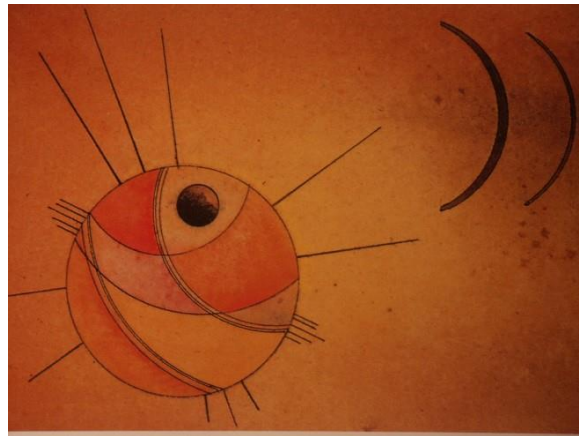
Sherly Yaghoubi

Hidden Markov Models have previously been used to identify single-molecule interactions on Molecular Electronics chips with a great degree of success. Currently, the new problem is how to identify DNA sequences read by these chips. Hidden Markov Models have the possibility of identifying the 5 states present in DNA sequencing data. This is tested in Python using the package hmmlearn to create an HMM algorithm with 5 possible states. DNA data was generated at varying levels of noise and standard deviations before being sent through the HMM algorithm. This presentation reviews the results of a HMM algorithm on DNA sequencing data, and analyzes possible future routes.



## **HONORS PROGRAM COMMUNITY STATEMENT**

The Honors Program at CSU Stanislaus is a community of scholars bound together by vital principles of academic openness, integrity, and respect. Through focused study and practice involving exploration and discovery across a variety of disciplines, the Honors Program upholds these principles of scholarly engagement and provides students with the necessary foundations for further research and inquiry.



Our interdisciplinary curriculum is integral to this work and is intended to facilitate creative understanding of the irreducible complexities of contemporary life and knowledge. Personal and intellectual honesty and curiosity are essential to this process. So, too, is critical openness to difficult topics and respect for different perspectives, values and disciplines. The Honors Program aims to uphold these virtues in practice, in principle, and in community with one another.