

HONORS COLLEGE



RESEARCH WEEK 2025

— SCHEDULE AT A GLANCE —

MONDAY, APRIL 21

UC 168 A/B

9:00 A.M.— 4:15 P.M.

**Presentations by students in the following tracks:
Nursing and Social Sciences**

TUESDAY, APRIL 22

LIBRARY AUDITORIUM

9:00 A.M.— 10:15 A.M.

Presentations by students in the Music track

UC 168 A/B

11:00 A.M.— 3:00 P.M.

**Presentations by students in the following tracks:
Biology and Cognitive Science**

LIBRARY AUDITORIUM

7:00 P.M.

**Presentations by students in the
Performing and Literary Arts Track
and the Independent Track**

WEDNESDAY, APRIL 23

UC 168 A/B

12:00 P.M. — 4:45 P.M.

**Presentations by students in the following tracks:
Global Public Health and Clinical Psychology and Neuropsychology**

THURSDAY, APRIL 24

UC 168 A/B

9:00 A.M. — 1:30 P.M.

**Presentations by students in the following tracks:
Business and Humanities**

ABOUT HONORS RESEARCH WEEK 2025...

Each spring, the Honors College showcases the work of students who are completing one of the Honors College tracks, and recognizes the faculty and staff members who have contributed to their success. Congratulations to all of the outstanding individuals who are participating in Honors Research Week!

WILLIAM PATERSON UNIVERSITY

Richard Helldobler
University President

Joshua Powers
Provost and Senior Vice President
for Academic Affairs

Barbara Andrew
Honors College Dean

UNIVERSITY HONORS COLLEGE

**Raubinger 207
300 Pompton Road
Wayne, New Jersey
honors@wpunj.edu
www.wpunj.edu/honors**

PRESENTATION SCHEDULE—MONDAY, 4/21 AND TUESDAY, 4/22

Monday, April 21 – UC 168 A/B

9:00 am	Kaylyn Aponte	NUR
9:15	Christian Caporelli	NUR
9:30	Kaitlyn Camuto	NUR
9:45	Stephanie DeFede	NUR
10:00	Peyton Diaz	NUR
10:15	Natalie Donda	NUR
10:30	Madelyn Esquibal	NUR
10:45	*Dr. Sandra DeYoung	
10:50	BREAK	
11:00	Kayla Facey	NUR
11:15	Aidan Herbert	NUR
11:30	Elsa Koama	NUR
11:45	Aishat Owonla	NUR
12:00	Danielle Nicole Ponce	NUR
12:15	Arianna Vega	NUR
12:30	Daniel Youn	NUR
12:45	Julia Zon	NUR
1:00-3:00	BREAK	
3:00	Jake Debarros	SS
3:15	Melissa Chalhoub	SS
3:30	Juliana Kaynak	SS
3:45	Levi Mbaka	SS
4:00	Benjamin Wood	SS
4:15	Alexa Teixeira	SS

HONORS TRACK KEY

BIO	BIOLOGY
BU	BUSINESS
CGSI	COGNITIVE SCIENCE
CP	CLINICAL PSYCH & NEUROPSYCH
HUM	HUMANITIES
IND	INDEPENDENT
MUS	MUSIC
NUR	NURSING
GPH	GLOBAL PUBLIC HEALTH
PLA	PERFORMING & LITERARY ARTS
SSH	SOCIAL SCIENCES

Tuesday, April 22 – Library Auditorium

9:00 am	Lasse Corson	MUS
9:15	Christian Leitner	MUS
9:30	Julia Macedo	MUS
9:45	Taku Murakami	MUS
10:00	Waseem Shakhshir	MUS
10:15	Ricky Steinel	MUS
10:30-11:00	BREAK	
UC 168 A/B		
11:00	Antonio Guarino	BIO
11:15	Sebastian Honores	BIO
11:30	Jeanette Hudak	BIO
11:45	Katherine O'Donnell	BIO
12:00	Sabrina Ryan	BIO
12:15	Zubayeda Uddin	BIO
12:30	Isabella Westervelt	BIO
12:45	Rafiatou Bikienga	BIO
1:00	Amjad Shehadeh	BIO
1:15	Jakia Uddin	BIO
1:30-2:00	BREAK	
2:00	Marina Armanious	CGSI
2:15	Stepheny Kallah	CGSI
2:30	Mackenzie O'Brien	CGSI
2:45	Alanna Timmons	CGSI
3:00	Honey Prajapati	CGSI
3:15-7:00	BREAK	
Library Auditorium		
7:00	*Ms. Ashley Pettet Evan Casaleggio Joseph Foglia Eliza MacLeod Shae Rice	PLA
8:00	Daniel Pantoliano	IND
8:15	*Dr. James Van Wyck	

* Brief Remarks y Honors College Advisory Council member

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PRESENTATION SCHEDULE—WEDNESDAY, 4/23 AND THURSDAY, 4/24

Wednesday, April 23 – UC 168 A/B

12:00 pm	Luke Antoci	GPH
12:15	Ethan Cheung	GPH
12:30	Johnpaul Infante	GPH
12:45	Sowmya Kovvuri	GPH
1:00	Bryan Mathews	GPH
1:15	Lamonica Mungo	GPH
1:30	Jason Peralta	GPH
1:45	Arnelda Selmani	GPH
2:00-2:30	BREAK	
2:30	Kourtney Hartzel	CP
2:45	Shayla Johns	CP
3:00	Jade Martinez	CP
3:15	Hailey Nelson	CP
3:30	Madelynn Spink	CP
3:45	Diana Zuta	CP
4:00	Tom Radigan	CP
4:15	Sofia Lauret	CP
4:30	Lauren Hutchison	CP
4:45	Brianna De La Cruz	CP

Thursday, April 24 – UC 168 A/B

9:00 am	*Ms. Kleopatra Phili Lorenzo Assante Derek Koch Patrick Pantoliano Digvijay Subba Janmajay Subba Kaitlin Yany	BU
10:00 -12:00	BREAK	
12:00	Jailyn Alberto	HUM
12:15	Grace Bintliff	HUM
12:30	Daniel Burke	HUM
12:45	Hava Senman	HUM
1:00	Misty Skupienski	HUM
1:15	Kamberly Valle	HUM
1:30	Bijay Bhat	IND

**Brief Remarks by Honors College Advisory Council member*

— HONORS COLLEGE TRACK DIRECTORS —

Dr. Barbara Andrew
Independent

Dr. Jill Nocella
Nursing

Dr. Bruce Diamond
Clinical Psychology
and Neuropsychology

Dr. K. Molly O'Donnell
Humanities

Dr. Christopher Herbert
Music

Dr. Marianne Sullivan
Global Public Health

Dr. Michael Gordon
(Interim) Cognitive Science

Dr. Danielle Wallace
Social Sciences

Dr. John Malindretos
Business

Dr. Martha Witt
Performing and Literary Arts

Dr. Emily Monroe
Biology

HONORS COLLEGE ADVISORY COUNCIL

Sandy DeYoung
Former University Provost and Dean
of the College of Science and Health

John DeLuca
Senior Vice President for Research,
Kessler Foundation

Julie Minicozzi
Associate at Lowenstein Sandler

Ashley Pettet
Singer, Recording and Performing Artist

Kleo Phili
LIC, R.E. Salesperson, Brown Harris Stevens
Residential Sales

James Van Wyck
Assistant Dean for Professional Development,
Princeton Graduate School

ABOUT THE PRESENTERS...



JAILYN MICHELLE ALBERTO

Honors Track: Humanities

Majors: Psychology and Social Work

Thesis Title: *The Sound of My Mind*

Thesis Advisor: Dr. K. Molly O'Donnell



LUKE ANTOCI

Honors Track: Global Public Health

Major: Environmental Sustainability

Minors: Public Health and Entrepreneurship

Thesis Title: *Well Water at Risk: How States are Approaching the PFAS Threat to Private Well Contamination*

Thesis Advisor: Dr. Marianne Sullivan



KAYLYN APONTE

Honors Track: Nursing

Major: Nursing

Thesis Title: *Critical Congenital Cardiac Defects in Neonates*

Thesis Advisor: Dr. Jill Nocella



MARINA ARMANIOUS

Honors Track: Cognitive Science

Major: Speech-Language Pathology

Minor: Psychology

Thesis Title: *"Divided Minds: The Impact of Media Multitasking on Attention"*

Thesis Advisor: Dr. Michael Gordon



LORENZO ASSANTE

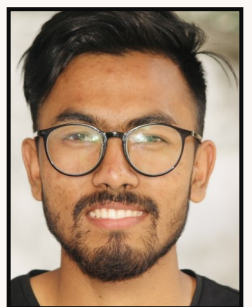
Honors Track: Business

Major: Management

Minor: Economics

Thesis Title: *Alpha Securities Business Plan*

Thesis Advisors: Dr. John Malindretos and Dr. Ashley Lee



BIJAY BHAT

Honors Track: Independent

Major: Mathematics

Minor: Statistics

Thesis Title: *Hands-On Learning in Mathematics: Perspectives from College Students and Educators*

Thesis Advisors: Dr. Barbara Andrew and Dr. Eliana Antoniou



RAFIATOU BIKIENGA

Honors Track: Biology

Majors: Chemistry and Medicinal Biochemistry

Thesis Title: *Synthesis of Triazole Molecules for Medicinal Use*

Thesis Advisors: Dr. Emily Monroe and Dr. Satam Nishikant



GRACE ELIZABETH BINTLIFF

Honors Track: Humanities

Major: History

Minor: Art History

Thesis Title: *Aurora*

Thesis Advisor: Dr. K. Molly O'Donnell



DANIEL BURKE

Honors Track: Humanities

Majors: Secondary Education and History

Thesis Title: *Tommy Shelby Vs. Oswald Mosley: How Peaky Blinders Reworks History*

Thesis Advisor: Dr. K. Molly O'Donnell



KAITLYN CAMUTO

Honors Track: Nursing

Major: Nursing

Thesis Title: *Attitudes and Perceptions of Nursing Students towards COVID-19 and its Impact on Healthcare Delivery*

Thesis Advisor: Dr. Jill Nocella



CHRISTIAN CAPORELLI

Honors Track: Nursing

Major: Nursing

Thesis Title: *The Relationship Between Medication Errors and Fatigue, Stress, and Burnout: An Integrative Review of the Literature*

Thesis Advisor: Dr. Jill Nocella



EVAN CASALEGGIO

Honors Track: Performing and Literary Arts

Major: Secondary Education (English)

Thesis Title: *Show and Tell*

Thesis Advisor: Dr. Martha Witt



MELISSA CHALHOUB
Honors Track: Social Sciences
Major: Political Science
Minors: Legal Studies, Women and Gender Studies
Thesis Title: *Exploring the Future of the Political System in Lebanon*
Thesis Advisor: Dr. Danielle Wallace



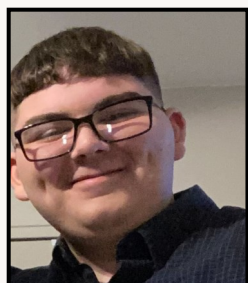
ETHAN CHEUNG
Honors Track: Global Public Health
Major: Public Health
Thesis Title: *A Survey of Mosquito Control Practices In New Jersey*
Thesis Advisor: Dr. Marianne Sullivan



LASSE REY CORSON
Honors Track: Music
Major: Music (Jazz Sound Engineering)
Thesis Title: *Recital and Recording of Original Compositions*
Thesis Advisor: Dr. Christopher Herbert



BRIANNA DE LA CRUZ
Honors Track: Clinical Psychology and Neuropsychology
Major: Sports Medicine
Thesis Title: *"Anxiety & Depression Among Male & Female College Athletes: A Comparative Study Across Team Sports"*
Thesis Advisor: Dr. Bruce Diamond



JAKE DEBARROS
Honors Track: Social Sciences
Majors: Criminal Justice and Psychology
Thesis Title: *Does Listening to Music in Social Environments Promote Altruism and Pro-Social Behavior in Adults?*
Thesis Advisor: Dr. Danielle Wallace



STEPHANIE DEFEDE
Honors Track: Nursing
Major: Nursing
Thesis Title: *The Effects of Music Therapy on Labor and Postpartum Pain and Anxiety*
Thesis Advisor: Dr. Jill Nocella



PEYTON AMAYA DIAZ
Honors Track: Nursing
Major: Nursing
Thesis Title: *Race Correction in Pulmonary Function Tests*
Thesis Advisor: Dr. Jill Nocella



NATALIE DONDA
Honors Track: Nursing
Major: Nursing
Thesis Title: *Analysis of Oral Immunotherapy in Children with Milk Allergies*
Thesis Advisor: Dr. Jill Nocella



MADELYN ESQUIBAL
Honors Track: Nursing
Major: Nursing
Thesis Title: *The Safety and Efficiency of Neonatal Hats on Newborns*
Thesis Advisor: Dr. Jill Nocella



KAYLA SHIMEIRA FACEY
Honors Track: Nursing
Major: Nursing
Thesis Title: *How does early detection and management practices impact long-term respiratory health of children with asthma?*
Thesis Advisor: Dr. Jill Nocella



JOSEPH FOGLIA
Honors Track: Performing and Literary Arts
Major: Jazz Performance
Thesis Title: *A First Album! A Recording Project with My Mentor*
Thesis Advisor: Dr. Martha Witt



ANTONIO GUARINO
Honors Track: Biology
Major: Biology
Thesis Title: *Overexpression of a caspase 3-like gene from the Harmful Algal bloom species *Karenia brevis*, in *E. coli**
Thesis Advisor: Dr. Emily Monroe

ABOUT THE PRESENTERS...



KOURTNEY HARTZEL

Honors Track: Clinical Psychology and Neuropsychology

Majors: Biology and Psychology

Thesis Title: *Genetics, Neuropsychology, and Sociological Dimensions of Autism*

Thesis Advisor: Dr. Bruce Diamond



AIDAN HERBERT

Honors Track: Nursing

Major: Nursing

Thesis Title: *Survivability Utilizing Air vs. Ground Ambulance Transport in Acute Trauma Patients*

Thesis Advisor: Dr. Jill Nocella



SEBASTIAN HONORES

Honors Track: Biology

Major: Biotechnology

Thesis Title: *Behavioral Effects of Stress in (BTBR) mice and dopamine transporter (DAT-KO) mice*

Thesis Advisors: Dr. Emily Monroe and Dr. Emmanuel Onaivi



JEANETTE HUDAK

Honors Track: Biology

Major: General Biology

Minors: History and Mathematics

Thesis Title: *Developing Methods to Map the Mouse Gut Microbiome*

Thesis Advisors: Dr. Emily Monroe and Dr. Kendall Martin



LAUREN HUTCHISON

Honors Track: Clinical Psych & Neuropsychology

Major: Environmental Science

Minors: Psychology and Climate & Sustainability

Thesis Title: *Navigating Challenges: ADHD In College Athletes and its Impact on Performance and Well-Being*

Thesis Advisor: Dr. Bruce Diamond



JOHNPAUL INFANTE

Honors Track: Global Public Health

Major: Public Health

Minors: Biology and Environmental Science

Thesis Title: *Facilitating Forever Chemicals: How College Students Understand & Perceive Current Information on "PFAS"*

Thesis Advisor: Dr. Marianne Sullivan



SHAYLA JOHNS

Honors Track: Clinical Psych & Neuropsychology

Major: Psychology

Minor: Art Studio

Thesis Title: *Effectiveness of Parent Training on the development of Children with Autism Spectrum Disorder*

Thesis Advisor: Dr. Bruce Diamond



STEPHENY KALLAH

Honors Track: Cognitive Science

Major: Speech-Language Pathology

Minor: Psychology

Thesis Title: *The Accessibility of AAC Devices*

Thesis Advisor: Dr. Michael Gordon



JULIANA KAYNAK

Honors Track: Social Sciences

Majors: Sociology and Psychology

Minor: Korean Studies

Thesis Title: *Beyond the Screen: The Influence of Social Media Activism in Offline Movement*

Thesis Advisor: Dr. Danielle Wallace



ELSA W. KOAMA

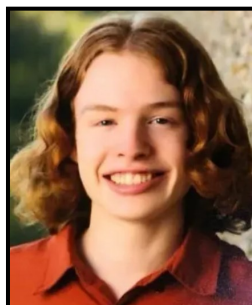
Honors Track: Nursing

Major: Nursing

Minor: Psychology

Thesis Title: *What factors contribute to neonatal jaundice in infants born in African countries?*

Thesis Advisor: Dr. Jill Nocella



DEREK R. KOCH

Honors Track: Business

Major: Economics

Thesis Title: *Alpha Securities Business Plan*

Thesis Advisors: Dr. John Malindretos and Dr. Ashley Lee



SOWMYA KOVVURI

Honors Track: Global Public Health

Major: Computer Science

Thesis Title: *"The Epidemiology and Impact of Type 2 Diabetes in New Jersey: Assessing Population Health and the Potential of Machine Learning in Advancing Detection"*

Thesis Advisor: Dr. Marianne Sullivan



SOFIA LAURET

Honors Track: Clinical Psych & Neuropsychology
Majors: Secondary Education and Spanish
Minors: ESL and Psychology
Thesis Title: *"Effective Strategies to Reduce Stressors Among ELL's during the Acculturation Process"*
Thesis Advisor: Dr. Bruce Diamond



LEVI MBAKA

Honors Track: Social Science
Major: Computer Science
Minor: Mathematics
Thesis Title: *Navigating Financial Stress: The Impact on Academic Performance and Social Engagement Among International Students*
Thesis Advisor: Dr. Danielle Wallace



CHRISTIAN LEITNER

Honors Track: Music
Major: Music (Jazz Sound Engineering)
Thesis Title: *Understanding Compression in Recorded Music*
Thesis Advisor: Dr. Christopher Herbert



LAMONICA MUNGO

Honors Track: Global Public Health
Major: Nursing
Thesis Title: *Surrounded By Hazards: Nursing Students Perceptions of Occupational Hazards in a Nurses' Workplace*
Thesis Advisor: Dr. Marianne Sullivan



JULIA DE SOUZA MACEDO

Honors Track: Music
Major: Music (Jazz Voice, Secondary Education)
Thesis Title: *Unveiling the Veil: Exploring the Protest Roots of Bossa Nova and MPB, a Concept Album*
Thesis Advisor: Dr. Christopher Herbert



TAKU MURAKAMI

Honors Track: Music
Major: Music (Jazz Studies)
Thesis Title: *The Legacy of Ryuichi Sakamoto and "Merry Christmas, Mr. Lawrence"*
Thesis Advisor: Dr. Christopher Herbert



ELIZA MACLEOD

Honors Track: Performing and Literary Arts
Majors: Elementary Education (General Studies) and Liberal Studies (Psychology and Women & Gender Studies)
Thesis Title: *Back Around Again—An Original EP*
Thesis Advisor: Dr. Martha Witt



HAILEY NELSON

Honors Track: Clinical Psychology and Neuropsychology
Major: Sports Medicine
Thesis Title: *The Athlete's Ability to Turn Off Pain*
Thesis Advisor: Dr. Bruce Diamond



JADE MARTINEZ

Honors Track: Clinical Psych and Neuropsychology
Major: Psychology
Minors: Criminology/Criminal Justice and Forensic Studies
Thesis Title: *Leadership Development in College Athletes vs. Non-Athletes*
Thesis Advisor: Dr. Bruce Diamond



MACKENZIE O'BRIEN

Honors Track: Cognitive Science
Major: Sport Management
Thesis Title: *Assessing College Students' Access to and Satisfaction with Campus Mental Health Resources*
Thesis Advisor: Dr. Michael Gordon



BRYAN MATHEWS

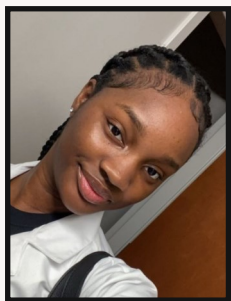
Honors Track: Global Public Health
Major: Computer Science
Minor: Business
Thesis Title: *Innovative Solutions to address Arsenic Contamination in Drinking Water: Evaluating Effective Approaches for Low-Income Countries*
Thesis Advisor: Dr. Marianne Sullivan



KATHERINE O'DONNELL

Honors Track: Biology
Major: Biology (Pre-Medical Professions)
Minor: Chemistry
Thesis Title: *UBC Primer 810 As A Tool for Determining Genotypic Diversity of *Ammophila breviligulata* (American Beachgrass) In New Jersey Coastal Dunes*
Thesis Advisors: Dr. Emily Monroe and Dr. David Slaymaker

ABOUT THE PRESENTERS...



AISHAT OWONLA

Honors Track: Nursing

Major: Nursing

Thesis Title: *"What are the implications of teenage pregnancy on teenagers physically, socially, and economically?"*

Thesis Advisor: Dr. Jill Nocella



DANIEL PANTOLIANO

Honors Track: Independent

Major: Management

Thesis Title: *Rebuilding Commercial Real Estate After COVID-19: What's Next for Office, Retail, and Warehouse Spaces?*

Thesis Advisors: Dr. Barbara Andrew and Dr. John Malindretos



PATRICK PANTOLIANO

Honors Track: Business

Major: Sports Management

Thesis Title: *Alpha Securities Business Plan*

Thesis Advisors: Dr. John Malindretos and Dr. Ashley Lee



JASON PERALTA

Honors Track: Global Public Health

Major: Environmental Sustainability

Minors: Public Health, Anthropology, and Social Justice

Thesis Title: *A World on Fire and Underwater: Exploring the Health Risks of Climate Change for Indigenous Communities*

Thesis Advisor: Dr. Marianne Sullivan



DANIELLE NICOLE PONCE

Honors Track: Nursing

Major: Nursing

Thesis Title: *An Integrative Review: The Migration Experiences of Filipino Nurses*

Thesis Advisor: Dr. Jill Nocella



HONEY PRAJAPATI

Honors Track: Cognitive Science

Major: Biology (Pre-Med)

Minor: Chemistry

Thesis Title: *In-Silico Analysis of NPM1 Mutations in Acute Myeloid Leukemia*

Thesis Advisor: Dr. Michael Gordon



THOMAS RADIGAN

Honors Track: Clinical Psych & Neuropsychology

Major: Computer Science

Minor: Psychology

Thesis Title: *Examining the Effects of Performance Anxiety and its Management in Athletics*

Thesis Advisor: Dr. Bruce Diamond



SHAE RICE

Honors Track: Performing and Literary Arts

Major: English (Creative Writing)

Minor: Women & Gender Studies

Thesis Title: *The Positive Effects of Expressive Writing on the Psyche*

Thesis Advisor: Dr. Martha Witt



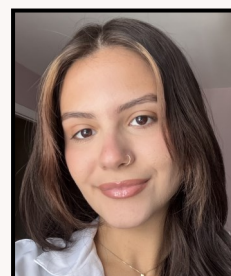
SABRINA RYAN

Honors Track: Biology

Major: Environmental Science

Thesis Title: *Refining Modern Temperature Calibrations of Organic Biomarkers in U.S. East Coast Lake Sediments for Paleoclimate Reconstructions*

Thesis Advisors: Dr. Emily Monroe and Dr. Michael Griffiths



ARNELDA SELMANI

Honors Track: Global Public Health

Major: Nursing

Thesis Title: *Lessons from Oregon's Approach to Drug Reform*

Thesis Advisor: Dr. Marianne Sullivan



HAVA SENMAN

Honors Track: Humanities

Major: Communication

Thesis Title: *Living Slow*

Thesis Advisor: Dr. K. Molly O'Donnell



WASEEM SHAKSHIR

Honors Track: Music

Major: Music (Classical Sound Engineering)

Thesis Title: *Resistance Symbolism in Palestinian Music*

Thesis Advisor: Dr. Christopher Herbert



AMJAD SHEHADEH

Honors Track: Biology

Major: Biology

Minor: Public Health

Thesis Title: *Honeybee Gut Microbiome*

Thesis Advisor: Dr. Emily Monroe



MISTY SKUPIENSKI

Honors Track: Humanities

Major: Psychology

Minor: Korean Studies, Disability Studies

Thesis Title: *Learning to Love Myself Through BTS: K-pop and the Teen Mental Health Crisis*

Thesis Advisor: Dr. K. Molly O'Donnell



MADELYNN SPINK

Honors Track: Clinical Psychology and Neuropsychology

Major: Health and Physical Education

Thesis Title: *The Impact of Injuries on the Mental Health of Athletes*

Thesis Advisor: Dr. Bruce Diamond



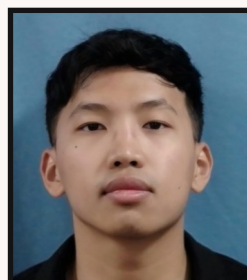
RICKY STEINEL

Honors Track: Music

Major: Computer Science

Thesis Title: *How Composers Create Tension and Release*

Thesis Advisor: Dr. Christopher Herbert



DIGVIJAY SUBBA

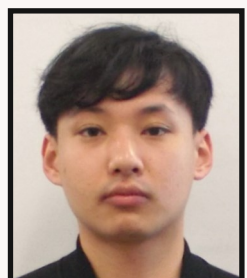
Honors Track: Business

Major: Computer Science

Minor: Business

Thesis Title: *Alpha Securities Business Plan*

Thesis Advisors: Dr. John Malindretos and Dr. Ashley Lee



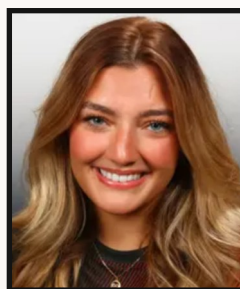
JANMAJAY SUBBA

Honors Track: Business

Major: Mathematics

Thesis Title: *Alpha Securities Business Plan*

Thesis Advisors: Dr. John Malindretos and Dr. Ashley Lee



ALEXA TEIXEIRA

Honors Track: Social Sciences

Majors: Elementary Education and Liberal Studies

Minors: General Studies, Political Science, and History

Thesis Title: *The Effect of COVID-19 on the Mental Health of Post-Secondary Education Students*

Thesis Advisor: Dr. Danielle Wallace



ALANNA TIMMONS

Honors Track: Cognitive Science

Major: Speech-Language Pathology

Minors: Music and Psychology

Thesis Title: *Singing and the Aging Voice: Acoustic Analyses of Professional Singers and Orators*

Thesis Advisor: Dr. Michael Gordon



JAKIA UDDIN

Honors Track: Biology

Majors: Medicinal Biochemistry

Thesis Title: *The Role of Tyrosinase in Detoxifying Aldehydes and Preventing Protein Carbonylation*

Thesis Advisors: Dr. Emily Monroe and Dr. David A. Snyder



ZUBAYEDA UDDIN

Honors Track: Biology

Majors: Biotechnology and Chemistry

Thesis Title: *The role of the cell wall integrity pathway in antifungal resistance in the opportunistic pathogen Candida glabrata*

Thesis Advisors: Dr. Emily Monroe and Dr. Kelley R. Healey



KAMBERLY VALLE

Honors Track: Humanities

Major: Art (Art Studio)

Thesis Title: *Peaceful Nature*

Thesis Advisor: Dr. K. Molly O'Donnell



ARIANNA VEGA

Honors Track: Nursing

Major: Nursing

Minor: Psychology

Thesis Title: *Contributing Factors of Depression in Undergraduate Nursing Students*

Thesis Advisor: Dr. Jill Nocella



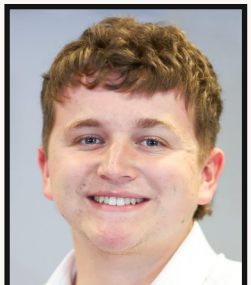
ISABELLA WESTERVELT

Honors Track: Biology

Major: Biology

Thesis Title: *Identifying Potential Regulators of mrp Expression in Marinobacter Adhaerens*

Thesis Advisors: Dr. Emily Monroe and Dr. Carey Waldburger



BEN WOOD

Honors Track: Social Science

Major: Exercise Science

Thesis Title: *Indigenous Healthcare: A Tale of Disparities and Neglect*

Thesis Advisor: Dr. Danielle Wallace



KAITLIN A. YANY

Honors Track: Business

Majors: Business Management and Finance

Thesis Title: *Alpha Securities Business Plan*

Thesis Advisors: Dr. John Malindretos and Dr. Ashley Lee



DANIEL YOUN

Honors Track: Nursing

Major: Nursing

Thesis Title: *Are Individuals who Experience Adverse Childhood Events (ACEs) More Likely to Develop a Chronic Illness?*

Thesis Advisor: Dr. Jill Nocella



JULIA ZON

Honors Track: Nursing

Major: Nursing

Thesis Title: *Effectiveness of Violence Prevention in the Emergency Department*

Thesis Advisor: Dr. Jill Nocella



DIANA ZUTA

Honors Track: Clinical Psychology and Neuropsychology

Major: Exercise Science

Thesis Title: *Effects of aerobic exercise and music on cognitive function*

Thesis Advisor: Dr. Bruce Diamond

William Paterson University Honors College

Barbara Andrew
Dean

Elizabeth Harkins
Honors College Fellow

Jan Pinkston
Associate Director

Kourtney Scipio
Graduate Assistant

Helenah Comia and Madison Kneuppel
Office Interns

**Madison Kneuppel, Angie Marcucilli, Jason Peralta,
Rory Stansfield, Owen Walter,
and Sarah Weissberg**
Honors Peer Leaders

Hannah Comia and Ashanti Jones
Honors Academic Support Coaches



About the Honors College at William Paterson...

In the University Honors College, students explore new ideas and engage in intellectual and creative collaborations with outstanding professors in a community that brings together students' academic, residential, social, and cultural experiences. The Honors College offers a rigorous curriculum with a challenging array of courses, seminars, and co-curricular activities, along with faculty and staff mentors who offer support throughout a student's college career.

UNIVERSITY HONORS COLLEGE

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HONORS RESEARCH WEEK 2025

Presentation Abstracts

— Listed alphabetically by last name —

Alberto, Jailyn Michelle

The Sound of My Mind

For my creative writing thesis, my goal is to connect my trauma in my writings to the psychological effects it has on me as a person. I will begin to explain that sometimes the experiences we share with others and live through are more than just memories but make up a big piece of who we are. Through writing, I am able to connect with people and myself and analyze my own work; I am able to self reflect and truly dive deep into what it means to heal from trauma and my writing process that supports me. In summary my poems were a collection of memories, emotions and reflections that I have experienced throughout the years. It is a self project on my ability to grow despite my challenges and adversities I had to endure as a young girl coming of age into the world.

Antoci, Luke

Well Water at Risk: How States are Approaching the PFAS Threat to Private Well Contamination

PFAS, or “forever chemicals”, have been widely dispersed throughout the environment. These chemicals, used in various industries, do not break down in the environment. People are exposed to PFAS primarily through the ingestion of water and food. While the EPA has created policies around PFAS in public drinking water, private well policies are under the jurisdiction of states. However, most states have very limited policies to address PFAS in drinking water.

It is important to have policies for PFAS in private wells because of the various health effects of PFAS, including kidney and thyroid cancers. My objective is to understand what regulations, policies, and programs U.S. states have established to address PFAS contamination in private wells, and to know the strengths and weaknesses of them.

This research will use a qualitative and quantitative content analysis by analyzing and comparing current PFAS in private well related policies. This presentation will cover results from this research covering how states are handling PFAS contamination in private wells and will make recommendations for best practices.

Aponte, Kaylyn

Critical Congenital Cardiac Defects in Neonates

Critical congenital heart disease is the most frequent malformation in neonates worldwide. If undiagnosed, this condition can lead to increased neonatal mortality. The pulse oximeter, a cost-effective and accessible tool, detects oxygenation percentages and can aid in early CCHD diagnoses.

This systematic review analyzed routine screening methods and their influence on the timely diagnosis. Using the PRISMA guide, a search of the literature was performed on CINAHL and MEDLINE. Studies that included physical examination, cardiac auscultation, and pulse oximeters to detect critical congenital heart disease were chosen. Articles comparing detection rates before and after using a pulse oximeter were examined; articles that studied the cost-effectiveness and accessibility within different populations were also included. Findings of the systematic review show that pulse oximetry detects CCHD early, lowering mortality rates within neonates. Furthermore, if the pulse oximeter is paired with cardiac auscultation or physical examination, this further enhances early detection among neonates.

Armanious, Marina

Divided Minds: The Impact of Media Multitasking on Attention

This study explored the relationship between media multitasking and attention. Participants completed a survey assessing their multitasking tendencies and daily attention habits, then viewed five 30-second custom-designed videos varying in attentional demands (1-4 simultaneous visual and auditory streams). Videos were displayed in a quadrant format, featuring static images, silent clips, narrated content, and audiovisual clips with background noise, followed by answering content-related questions. Results indicated that attentional performance was influenced by multitasking tendencies and habitual attention. Specifically, individuals with less inclination to multitask demonstrated better attention, particularly when processing multiple streams. In addition, outcomes showed that stronger habitual attention also correlated with improved performance, suggesting that those with greater focus and reduced susceptibility to distraction are better equipped to handle complex media environments. Respectively, low multitaskers presented better attention performance as the stimulation intensified. These findings highlight the impact of everyday attention behaviors on media engagement.

Assante, Lorenzo

Alpha Securities Business Plan

This business plan presents the strategic vision and operational framework for Alpha Securities, a new financial services firm. The plan offers a comprehensive analysis of the firm's mission, objectives, and the industry landscape, highlighting key market opportunities and competitive positioning. It also details service offerings, revenue model, management structures, and marketing strategies designed to drive growth and client acquisition. Additionally, the plan includes financial projections, risk assessments, and actionable strategies to position Alpha Securities as a trusted player in the financial services sector, while delivering long-term value to clients.

Bhat, Bijay

Hands-On Learning in Mathematics: Perspectives from College Students and Educators

Many students find math hard because of more theoretical based learning that includes memorizing complex formulas, theorems, and unaware of its real-life applications. This research explores the impact of interactive and practical learning and teaching experiences on student learning and engagement. A survey was conducted among students and faculties using google forms. They were asked series of MCQ questions as well as open ended questions related to hands on learning and teaching in mathematics to learn about the students and faculties attitude towards these teaching approaches. The results clearly indicate that students have a strong preference toward hands on learning compared to traditional methods. Teachers may tilt a little more toward hands on methods but less strongly than students due to lack of time and resources available to them. As a result, students and teachers alike believe that math education needs more real-world applications problems, more technology-oriented lesson plan, and more group projects. One effective approach is to incorporate brief hands-on activities within conventional lessons.

Bikienga, Rafiatou

Synthesis of Triazole Molecules

Triazoles are pivotal moieties in the realms of organic synthesis, chemical biology, and medicinal chemistry. They are recognized for their extensive biological activities, including efficacy against arthropod-borne diseases and the inhibition of VEGF receptors 1 and 2. They are incorporated in various pharmaceuticals drug, such as Tazobactam I and Cefatrizine II. A highly effective and widely utilized strategy for synthesizing triazoles in drug discovery, materials science, and bioconjugation is the click chemistry reaction between azides and alkynes, a powerful chemistry reaction between azides and alkynes, a powerful approach that has revolutionized these fields. These triazoles can be selectively dissociated into highly reactive carbenoid species through Lewis acid and metal-catalyzed reactions. Thus, presenting a unique pathway for organic researchers to harness carbenoid intermediates in the synthesis of small molecules with diverse structural complexities. This research investigates the reaction of triazoles with 2-hydroxy quinone methides (p-HQMs) through the formation of such a Rhodium carbenoid intermediate. The synthesized compounds will be evaluated for their biological activity against various fungal and bacterial strains.

Bintliff, Grace Elizabeth

Aurora

My creative project is Aurora, a fantasy new adult novel that explores the themes of coming of age in an unwelcoming environment, overcoming adversity, and taking back personal autonomy. My protagonist, Eve Augustine, is the sheltered daughter of the lower nobility who embodies mystical powers in the form of physical perfection and charm, yet has seen little benefit from her inheritance. Societal and parental pressures push her toward marrying the bastard son of the emperor, despite her yearning for independence. Escaping her supposed destiny, she ditches her fiancé, fleeing to a war-torn neighboring country to the north. Along her journey, she learns to use her wits to survive while relying on herself and a band of fellow magical misfits. Then, she suddenly finds herself face-to-face with her archnemeses, the prophesied world ender. Can she find a way to cheat destiny and save herself and her friends?

Burke, Daniel

Tommy Shelby Vs. Oswald Mosley: How Peaky Blinders Reworks History

The popular Netflix show *Peaky Blinders* has recently awakened interest in post-World War I politics and ordinary life in Britain. Seasons five and six of the show provide the main focus of this thesis, centered around the show's main character, Tommy Shelby, and a new character named Oswald Mosley. In real life, Mosley was a fascist with ties to the Nazi Party and Adolf Hitler in Germany, and the screenwriters inserted details from the real Mosley into the character. I use historical research to argue that the show *Peaky Blinders* creates a realistic and thrilling story based on historical facts that collide with the fictitious portrayals within the story. This research compares Mosley's rendering from the show to primary sources, including newspapers, pamphlets, and Mosley's biography, *My Life*, as well as secondary sources, including books on the Interwar Period in Britain. My thesis focuses on the long game between these two ambitious and ruthless politicians, showing where history greatly enhances the story and where fantasy creeps in.

Camuto, Kaitlyn

Attitudes and Perceptions of Nursing Students towards COVID-19 and Its Impact on Healthcare Delivery

The COVID-19 pandemic has impacted and challenged the healthcare system as a whole. The pandemic put a hold on education for nursing students and also raised new fears and perspectives regarding healthcare in millions of nursing students across the world. This systematic review will examine the perceptions and attitudes of nursing students towards COVID-19 and its impact on healthcare delivery. A search of the literature will be performed following the PRISMA guide, along with using CINAHL and MEDLINE (via PubMed) databases. Eligible studies were peer reviewed and published in English language with human subjects (ages 19-44 years and undergraduate nursing students) from 2019 to 2024. After all the findings were reviewed, the key themes that were analyzed and organized according to precautions, dying patients, attitudes and perceptions towards nursing profession, and clinical stress and well being. It was concluded that there is a need for further education surrounding the challenges that arose during the COVID-19 pandemic.

Caporelli, Christian

The Relationship Between Medication Errors and Fatigue, Stress, and Burnout: An Integrative Review of the Literature

Among the major factors contributing to medication administration errors, which compromise patient safety and quality, are stress, fatigue, and burnout among health professionals. This integrative review, through cross-sectional studies, cohort studies, and systematic reviews, investigates these associations using the PRISMA framework and CINAHL, assessing literature between 2009 and 2024. Systemic workplace factors include high workload, overtime, and understaffing, which increase stress and cognitive failures, resulting in critical omissions in patient care. Burnout characterized by depersonalization and emotional exhaustion has been strongly linked to increased medication errors, and psychological factors like depression further raise these risks. This review has established a pressing need for addressing such challenges with interventions. Improved staffing, leadership support, and wellness programs reduce stress-related errors, improve healthcare worker well-being, and improve patient safety. It enables healthcare organizations to apply evidence-based solutions in bringing a more sustainable and supportive work environment.

Casaleggio, Evan

Show and Tell

As a secondary English teacher candidate, I'm always looking for ways to connect writing across disciplines in an effort to engage a wide variety of learners. My project, an ekphrastic short story collection, has been an experiment in this regard. By drawing meaning and emotion from a multitude of art pieces and transcribing those feelings into short stories, I have been able to boost my creativity and appreciation for different cultures and perspectives. Through my experiences and challenges in composing these ekphrastic short stories, I have been able to accurately assess and reflect on the viability of ekphrastic assignments in the classroom across a diverse array of artistic styles. My thesis has been a fantastic opportunity to think deeply about my creative process – my strengths, shortcomings, and all of the complicated feelings that come with being a writer—many of which I had to confront to finish my creative project.

Chalhoub, Melissa

Exploring the Future of the Political System in Lebanon

The instability and political turmoil in Lebanon, has severely deteriorated its sovereignty, affecting the quality of life of its citizens, and impeding the system from moving towards advancement. This research aims to envision the future of the Lebanese political system by drawing a comparison of past events to the current situation based on the Lebanese people's political climate, to assess the direction of the political system to remain embedded in confessionalism or embrace the rise in secularism. The study was conducted by relying on in-person interviews with participants in Beirut, Lebanon, with participants, between the ages of 20 and 85. Analysis indicated an attachment of participants to their religious communities, the unique democratic and power-sharing structure of Lebanon, the rise in secularism through movements, the impact of confessionalism on the youth and economy, as well as the consequences post-civil war. Findings from this research can be used as a knowledgeable foundation to address the current ambiguous state Lebanon is in and develop a plan for political reform.

Cheung, Ethan

A Survey of Mosquito Control Practices in New Jersey

Mosquitos kill more people than any other animal in the world, spreading deadly diseases such as malaria and West Nile Virus. Effective mosquito control is essential in reducing disease transmission. Methods can range from chemical methods such as pesticides to non-chemical methods such as controlling standing water and public education. However, some methods have tradeoffs that can pose risks to human health, the environment, or be very costly. This research therefore will investigate New Jersey mosquito control agencies' decision-making processes around how best to control mosquitoes for public health protection. A 15 question survey was distributed to 21 county-based and 3 state-level mosquito control agencies in New Jersey. The survey assessed their practices, decision-making factors, successes, and challenges. This presentation will cover how New Jersey mosquito control agencies make decisions about how best to control mosquitoes while balancing factors such as costs, public perceptions, and environmental concerns.

Corson, Lasse Rey

Recital and Recording of Original Compositions

This project consists of a music recital with supplemental research-based program notes. The musical selections for the recital are a tribute to my personal artistic influences, including the works of Jaco Pastorius, Stevie Wonder, Pedro Martins and Daryl Johns. The performance also includes original compositions that take inspiration from these said influences. The overall program is musically connected, and its various components draw from one another – something that is vital in the progression of musical presentations within any genre. The supplemental program notes review these musicians' output and their impact on my own compositions. Moreover, the bibliographical background of these musicians, their inherent commonalities and intersections are explored.

De La Cruz, Brianna

Anxiety & Depression Among Male & Female College Athletes: A Comparative Study Across Team Sports

This study examines the relationship between gender and college athletes' mental health. Using an online survey, this research will gather information about anxiety and depression among male and female collegiate athletes currently participating in a range of sports. Additional information such as the athlete's position and the number of years they have been on the team will also be gathered. It is expected that female athletes will generally report higher levels of anxiety and depression compared to their male counterparts. The results of this study will provide valuable insights into the mental health challenges experienced by college athletes, helping us develop future support programs that are specifically tailored to address the unique mental health needs of athletes based on gender in order to create more effective mental health resources and treatment plans that target both the physical and emotional needs of college athletes. Ultimately, the goal is to improve overall well-being and performance by ensuring athletes have access to the support they need.

DeBarros, Jake

Does Listening to Music in Social Environments Promote Altruism and Pro-Social Behavior in Adults?

The increasing significance of music has given rise to studies relating to its impact on human psychology and anatomy. Recent literature suggests that listening to music has a significant impact on daily life, including routine, work ethic, and more specifically, altruistic tendencies, or the ability to be a kind, helping, human. This study seeks to understand the growing relationship between music and how it can facilitate altruistic behavior and bring people together. By surveying William Paterson University students and other adults 18 years of age and over, this study analyzes the relationship between people's daily activities and the likelihood that they will engage in altruistic activities. The data generated by this research will provide insight into how music has evolved with humans to bring significant behavior change, as well as open doors to further research on how music itself can alter human behavior.

DeFede, Stephanie

The Effects of Music Therapy on Labor and Postpartum Pain and Anxiety

Music therapy has emerged as a potential intervention for managing pain and anxiety during labor and the postpartum period. This integrative review evaluates its effectiveness based on current literature. A comprehensive search was conducted following PRISMA guidelines across PubMed, ScienceDirect, and CINAHL, including studies published between 2014 and 2024. Eligible studies, including randomized controlled trials, observational studies, and systematic reviews, focused on music therapy for pain and anxiety in labor and postpartum. The analysis compared music therapy's impact on pain intensity and anxiety levels to standard care or other interventions. Findings indicate that patients who used music therapy reported decreased Visual Analog Scale scores for pain, lower postpartum depression scores, and reduced anxiety levels compared to those who did not. This review highlights the potential of music therapy as a non-pharmacological approach in perinatal care, supporting its integration into clinical practice.

Diaz, Peyton Amaya

Race Correction in Pulmonary Function Tests

Race correction in pulmonary function testing (PFT) has long been a standard practice, but recent research suggests it may contribute to health disparities by misclassifying impaired lung function in African Americans as normal. This systematic review evaluates existing literature on race correction in PFTs using the PRISMA framework, analyzing fifteen studies from databases such as PubMed, Google Scholar, and ResearchGate. The findings indicate that race correction can lead to underdiagnosis and inadequate treatment for African American patients, ultimately exacerbating healthcare inequalities. Conversely, race-neutral equations provide a more equitable approach but cannot serve as the sole diagnostic tool. The review underscores the need for further research on long-term clinical consequences and the development of alternative predictive models that consider socioeconomic and environmental factors rather than race. The study calls for a reevaluation of race-based medical algorithms to ensure equitable healthcare outcomes for all patients.

Donda, Natalie

Analysis of Oral Immunotherapy in Children with Milk Allergies

Milk allergies in children are becoming increasingly prevalent, significantly impacting both the affected children and their caregivers. With limited treatment options available, children with milk allergies frequently face dietary restrictions, which can lead to potential nutritional deficiencies. Oral Immunotherapy (OIT) has emerged as a potential treatment to desensitize children to cow's milk allergens, but its effectiveness and safety remain under investigation. This paper systematically reviews the literature on OIT's role in treating cow's milk allergies in children, aiming to determine its efficacy, safety, and long-term outcomes. A literature search was conducted following PRISMA guidelines using the CINAHL database. Eligible studies spanned from 2010 to 2023 and met specific inclusion criteria: they involved children with milk allergies and were peer-reviewed. Findings indicated that OIT improved milk tolerance, though treatment responses varied, and safety concerns remained. Future research should focus on long-term tolerance, larger participant groups, and improved safety protocols.

Esquibal, Madelyn

The Safety and Efficiency of Neonatal Hats on Newborns

This systematic review examines the effectiveness of neonatal hats in reducing heat loss after delivery, analyzing peer-reviewed articles published between 1988 and 2024 in the English language. Following PRISMA guidelines, databases such as CINAHL, PubMed/MEDLINE, and the American Academy of Pediatrics (AAP) were searched. Findings show that full-term newborns do not require neonatal hats, especially when skin-to-skin contact is available, as it provides similar or better thermoregulation. Additionally, concerns about overheating and suffocation, particularly in home settings, were noted. However, preterm and low-birth-weight infants appeared to benefit more from neonatal hats, as they are at a higher risk for hypothermia due to their underdeveloped thermoregulation. Given these findings, this study suggests reconsidering routine neonatal hat use in hospitals and promoting more evidence-based alternatives. The goal is to improve clinical practices and educate parents on safer techniques for newborn care both in hospital settings and at home.

Facey, Kayla Shimeira

How does early detection and management practices impact longer term respiratory health of children with asthma

Diagnosis and treatment of childhood asthma has been a significant challenge for decades. A later diagnosis can lead to long-term negative respiratory health due to delayed treatment, emphasizing the need for improved diagnostic tools and education among healthcare providers (HCPs), parents, and children themselves. However, there are many factors contributing to diagnostic delays and potential medication treatment for children. Using the PRISMA guideline, a search of the literature was performed on the databases CINAHL, PubMed, and MEDLINE ProQuest. The search was reduced to a total of eleven articles using the following eligibility criteria: peer-reviewed literature discussing only the pediatric population and published after 2000. The findings of the study revealed that more research is needed to improve diagnostic tools, description of reported symptoms from the parents are misinterpreted by healthcare providers, and proper education amongst parents and healthcare providers are crucial to recognize symptoms early.

Foglia, Joseph

A First Album! A Recording Project with My Mentor

My artistic work is an eight-song album that evokes imagery of nature and the natural world. The track titles as well as ambient sounds and bright tonal qualities work in tandem to create a vivid picture. A sunny day in the middle of a vibrant glen, or in a forest at twilight dawn listening to the birds as they become the mornings minstrels. Through my music, I seek to create meaning by connecting our shared experiences of moments that evoke the beauty of the world around us. I want my music to connect with people and remind them of what they are familiar with as well as challenge them with new aesthetics and perspectives. Through a mix of contemporary original music and popular song, It is my goal to make an album that is both relatable and cutting edge.

Guarino, Antonio

Overexpression of a caspase 3-like gene from the Harmful Algal bloom species Karenia brevis, in E. coli

Blooms caused by the toxic dinoflagellate *Karenia brevis* persist in the Gulf of Mexico for months, with no known mechanism for their termination. Programmed Cell Death (PCD) has been proposed as a possible cause for termination, and caspase activity has been detected in *K. brevis*.

A candidate caspase gene (Kb-cas3) was identified in a 2014 transcriptome that could be responsible for caspase activity. This project aimed to overexpress the Kb-cas3 gene in *E. coli* using an alternate start codon. The caspase gene was amplified via PCR, inserted into a pET46 vector, and transformed into BL21 *E. coli* cells. Protein expression was induced with IPTG and cells were incubated overnight at 20°C with shaking. Western blots revealed the presence of a unique overexpressed protein in the induced protein lysate, and caspase activity is currently being investigated. This work is increasing our understanding of this protein's possible role in PCD.

Hartzel, Kourtney

Genetics, Neuropsychology, and Sociological Dimensions of Autism
Autism Spectrum Disorder (ASD) is a complex neurodevelopmental condition affecting approximately 1 in 54 children worldwide. It is characterized by challenges in social communication, restrictive interests, and repetitive behaviors, with significant variability in genetic underpinnings, neuropsychological outcomes, and sociological implications. Genetic research has identified critical genes and chromosomal regions, such as SHANK3 and 7q31-q33, while neuropsychological studies reveal diverse cognitive, sensory, and behavioral traits that require tailored diagnostic and therapeutic approaches. The sociological aspects of ASD, including the neurodiversity movement, highlight the importance of societal inclusion, ethical concerns surrounding genetic testing, and shifting public perceptions. This thesis synthesizes findings from genetics, neuropsychology, and sociology to bridge gaps in understanding ASD while integrating recent research to advance precision diagnostics, develop tailored interventions, and promote inclusive societal frameworks, with the goal of enhancing the quality of life and equity for individuals on the spectrum.

Herbert, Aidan

Survivability Utilizing Air vs. Ground Ambulance Transport in Acute Trauma Patients

Throughout the United States, many hospital systems and governmental agencies utilize rotorcraft to access and transport patients who have suffered traumatic injuries. However, are they as useful as initially thought to be? This study is a comprehensive retrospective review of literature that has been published on patient survivability, or rate of patient survival, in trauma cases where a rotorcraft was used in multiple geographic environments throughout the United States. CINAHL and Google Scholar were examined using the PRISMA guide. Articles published between 1997 and 2022, written in English and provided comparable survivability rates when a ground ambulance was utilized. The only major measurement taken into consideration was whether or not the patient survived transport to the trauma center. Discharge rates, permanent injury, or surgical success rates were not measured.

Honores, Sebastian

Behavioral Effects of Stress in (BTBR) mice and dopamine transporter (DAT-KO) mice

Preclinical mice models are utilized to explore the behavioral aspects and biological basis of certain neurological conditions and disorders. The S129 mouse strain, known for its well-documented genetic background, is being used to study with the (DAT)-KO mice. Dopamine transporter knockout (DAT)-KO mice lack the dopamine transporter protein and show elevated levels of dopamine in certain brain areas. This knockout results in hyperactivity and impulsivity. This study will investigate whether sex and mouse model strains (DAT)-KO/ S129 moderate behavior under non-stressed, stressed, and stressed/alcohol-exposed conditions. Behavioral assessments include wheel running activity and tail-flick tests. Both models will undergo a 5-day stress protocol with water consumption measurements and behavioral analyses. A subset group is exposed to an alcohol preference test with behavioral analyses performed on days 2/3. S129 mice are expected to result in moderate behavioral test results while (DAT)-KO mice are more likely to provide increased activity.

Hudak, Jeanette

Developing Methods to Map the Mouse Gut Microbiome

The cecum plays a crucial role in the fermentation process in the digestive tract of mice and rats and is the major site of production of short-chain fatty acids (SCFAs). Previous studies have shown that removal of the cecum in experimental mice significantly decreases SCFA production and have shown differences in microbiota across the cecum and ileum, with age, sex, and diet influencing microbial composition and SCFA production. This study aims to identify a non-invasive methodology for sampling cecal microbiota in mice without causing harm or altering the subject's health. Specifically, we will investigate a method to differentiate fecal pellets that have undergone fermentation in the cecum versus those that have not. We hypothesize that these two groups represent distinct microbiomes that may have differential effects on overall health and microbial interactions. This research could provide insights into the cecum's role in gut microbiota composition and its impact on metabolic health.

Hutchison, Lauren

Navigating Challenges: ADHD In College Athletes and its Impact on Performance and Well-Being

This study investigates the impact of Attention Deficit Hyperactivity Disorder (ADHD) on college athletes, focusing on how it affects their performance and overall well-being. Utilizing a comprehensive literature review, the research synthesizes existing studies on the prevalence of ADHD, the unique challenges faced by collegiate athletes, and effective coping strategies. Qualitative datasets were gathered through in-depth interviews with athletes diagnosed with ADHD, providing personal insights into their experiences, challenges, and the support systems that contribute to their success. However, the study also emphasizes the importance of supportive environments, including coaching strategies and mental health resources, in mitigating these challenges. Ultimately, this research aims to inform coaches and educational institutions about the specific needs of college athletes with ADHD, fostering a more inclusive athletic environment that prioritizes both performance and mental well-being.

Infante, Johnpaul

Facilitating Forever Chemicals: How College Students Understand & Perceive Current Information on "PFAS"

Human exposure to "forever chemicals" has been of increasing concern within the past few decades, despite recent drinking water regulations issued by EPA. Current literature identifies "at risk" populations that experience higher exposure rates, including occupations like office workers, factory workers, and firefighters, as well as specific communities including predominantly lower income, minority communities, pregnant women, and children. However, one population that is relatively absent in literature regarding PFAS exposure is college students, who are not considered an "at risk" population in most bodies of research. Most health information dissemination regarding PFAS exposure is not directed towards them. However, since college students are or will be in some of the at-risk communities, this study aims to understand how they make sense of PFAS health education information produced by government agencies. This presentation will share key findings from the group interviews related to college students' understanding of PFAS health infographics.

Johns, Shayla

Effectiveness of Parent Training on the development of Children with Autism Spectrum Disorder

This case study investigates the impact of parent training programs on the developmental outcomes of children with Autism Spectrum Disorder (ASD), with a focus on social communication, behavioral regulation, and adaptive functioning. The study examines how structured parent training, rooted in Applied Behavior Analysis (ABA) principles, empowers caregivers to implement evidence-based interventions effectively. A single-family case study design is used, where the mother participates in an 8–12 week training program incorporating positive reinforcement, antecedent-based strategies, and skill-building techniques. Training methods include direct instruction, role-playing, parent-child coaching, and follow-up support. Child progress is assessed using Central Reach data and observational measures, while caregiver confidence, competence, and stress levels are evaluated through self-reports. The results show the effectiveness of parent education in promoting consistent intervention techniques, reduce service gaps, and improve family well-being and child development. This study highlights the important role played by caregivers in these interventions and the fact that parent education is a useful, approachable strategy, especially in situations with limited resources and professional support.

Kallah, Stepheny

The Accessibility of AAC Devices

This study investigated the accessibility, usage, and challenges of Augmentative and Alternative Communication (AAC) devices by assessing user demographics, device customizability, systemic barriers, and training availability. Participants were surveyed online using Qualtrics. Those participants included caregivers, speech-language pathologists, educators, and others who regularly worked with individuals with communication disorders. Survey questions examined AAC device usage frequency, accessibility ratings, barriers, and user satisfaction. These questions explored the demographics of individuals supported by care-providers, financial challenges, questions about device implementation and training opportunities. Some obstacles to AAC adoption included limitations with funding and training. Open-ended responses provided insights into participants' personal experiences, revealing both the challenges and benefits associated with AAC. Less than 10% of surveyed individuals were familiar with AAC, and over 90% of professionals never received formal training. AAC support could be improved by addressing these barriers across many settings.

Kaynak, Juliana

Beyond the Screen: The Influence of Social Media Activism in Offline Movement

The increasing prominence of social media platforms has drastically transformed modern means of communication. Information can be accessed and shared globally with one click, and for this reason, digital spaces are widely used to advocate for an array of social issues. Although there are many benefits to this quick spread of information, there are many questions on the quality of this kind of activism—if it is performative or passive, or meaningful and facilitates social change. Through a survey distributed among college students between 18-25 years old, data was collected to learn about people's willingness to contribute to online and offline activism regarding three social issues: reproductive rights, climate change, and gun control. The results of this study help to highlight how digital participation influences offline behavior, and contribute to the debate regarding if online activism enhances or replaces traditional forms of social movement.

Koama, Elsa W.

What factors contribute to neonatal jaundice in infants born in African countries?

Neonatal jaundice (NNJ) remains a significant health concern in African countries due to numerous factors such as limited access to healthcare, high prevalence of hemolytic disorders, and inadequate resources for timely diagnosis and treatment. This systematic review aims to synthesize existing evidence on the epidemiology, risk factors, diagnostic approaches, management strategies, and outcomes of neonatal jaundice across African countries. The following databases were searched: PubMed, MEDLINE and CINAHL (Cumulative Index to Nursing and Allied Health). Search terms and keywords were tailored to capture relevant literature on neonatal jaundice, African countries, and related topics, including synonyms and variations. The analysis explored themes and patterns among past studies that researched NNJ in African countries only, in hopes of understanding the contributing factors that continue to make NNJ so prominent in the continent of Africa.

Koch, Derek R.

Alpha Securities Business Plan

This business plan presents the strategic vision and operational framework for Alpha Securities, a new financial services firm. The plan offers a comprehensive analysis of the firm's mission, objectives, and the industry landscape, highlighting key market opportunities and competitive positioning. It also details service offerings, revenue model, management structures, and marketing strategies designed to drive growth and client acquisition. Additionally, the plan includes financial projections, risk assessments, and actionable strategies to position Alpha Securities as a trusted player in the financial services sector, while delivering long-term value to clients.

Kovvuri, Sowmya

The Epidemiology and Impact of Type 2 Diabetes in New Jersey: Assessing Population Health and the Potential of Machine Learning in Advancing Detection

Type 2 diabetes (T2D) is a widespread chronic disease with severe complications, making early detection crucial. Traditional diagnostic methods rely on clinical criteria, but early-stage cases may be missed due to lack of access to healthcare or limitations in current screening approaches. This study explores how machine learning (ML) can enhance T2D detection by identifying risk factors and improving diagnostic accuracy. It examines and compares ML techniques, such as decision trees and neural networks, to conventional approaches. A mixed-methods approach examines T2D's impact in New Jersey and ML's role in detection. A quantitative analysis uses secondary data from health agencies to assess prevalence, hospitalization rates, and economic costs, through Excel. A scoping literature review follows PRISMA guidelines to evaluate ML applications and compare them to traditional approaches in early diagnosis. Findings will provide insight into T2D's burden in New Jersey and ML's potential to improve diabetes diagnostics, informing future research and healthcare strategies.

Lauret, Sofia

Effective Strategies to Reduce Stressors Among ELL's during the Acculturation Process

The acculturation process presents various challenges for English Language Learners (ELLs), often leading to increased stress and anxiety that can affect both academic performance and social integration. This study examines effective strategies to reduce these stressors, with a focus on addressing language anxiety, adapting to a new culture, and increasing classroom engagement. Through a comprehensive literature review, several key approaches emerged, including fostering a supportive learning environment, utilizing varied assessment methods, building meaningful teacher-student relationships, and incorporating mindfulness techniques. The study explores how these strategies contribute to reducing anxiety, promoting self-confidence, and enhancing classroom participation among ELLs. By implementing these approaches, educators can better support ELLs in overcoming linguistic and cultural barriers, creating a more inclusive and empowering classroom experience. The findings aim to inform best practices in education and provide practical recommendations for reducing stress and improving academic outcomes for ELLs.

Leitner, Christian

Understanding Compression in Recorded Music

The process of mixing a recording can have a large impact on how a song or album sounds. For this reason, many people look to have their songs mixed by certain engineers because of their individual sonic “footprint” they impart on the tracks they mix. This project considers three different celebrated mixing engineers and their specific techniques. By deconstructing three songs of the same genre that were mixed by these three engineers, the project analyzes how the sounds and mixes are similar to, and different from, one another. Finally, I apply these varied mixing principles to a song that I recorded to show them in action, as well as to highlight just how much a mix can change the sonic character of a recording.

Macedo, Julia De Souza

Unveiling the Veil: Exploring the Protest Roots of Bossa Nova and MPB, a Concept Album

This research project delves into the untold narratives of Bossa Nova and Brazilian Popular Music (MPB), shedding light on their origins as compelling forms of protest and resistance within the socio-political landscape of mid-20th century Brazil. Contrary to prevailing perceptions of these genres as mere providers of carefree melodies, this project seeks to uncover the obscured history of Bossa Nova and MPB, showcasing their emergence as powerful expressions of dissent and vehicles for social and political commentary. The research culminates in a concept album that intricately weaves together covers of protest songs from Bossa Nova and MPB, unraveling the nuanced narratives of resistance embedded in their melodies. In addition, the album pays homage to Brazil's beauty and complexity, presenting Bossa Nova and MPB not merely as a backdrop to moments of joy but as a reflection of a nation's spirit in constant evolution.

Macleod, Eliza

Back Around Again—An Original EP

I approached the project Back Around Again with the aim of letting songs flow through and out of me. What transpired are four original alternative rock and folk songs that tell the story of the seasons. The EP, which begins with fall, takes the listener through the cycle of decay, death, birth and life. My work on Back Around Again has been about finding ways to tell this story through lyrics, songwriting, and production style. Part of my goal is to leave the feeling and message of the EP ambiguous enough that listeners can form their own interpretations. Through this project, I have explored the processes of writing, recording, and producing original music in a semi-professional studio space. I have also collaborated with other artists and used feedback to shape and hone my project. I hope to soon release the album to the public on streaming platforms.

Martinez, Jade

Leadership Development in College Athletes vs. Non-Athletes

Leadership development is essential for both personal and professional growth, particularly during the influential college years. This study explores differences in leadership development between collegiate athletes and non-athletes by examining self-reported perspectives on leadership qualities such as relationship-building, problem-solving, teamwork, and time management. Using a mixed-methods approach, data will be collected through an online survey administered to undergraduate students at William Paterson University. The survey will include Likert-scale questions to quantify leadership qualities and open-ended questions to gain deeper insights into leadership experiences. Participants will report their involvement in leadership training, extracurricular activities, and athletics. Data analysis will identify patterns in leadership development, highlighting whether collegiate athletics promote unique leadership qualities. For example, leadership skills derived from collegiate athletics can typically be more collaborative, compared to more individualized styles of non-athletes. These results will show how creating different types of leadership opportunities can help student grow their leadership skills in higher education.

Mathews, Bryan

Innovative Solutions to address Arsenic Contamination in Drinking Water: Evaluating Effective Approaches for Low-Income Countries

Arsenic in drinking water is a major health threat for people in low-income countries such as India and Bangladesh. The continued exposure to arsenic leads to developing severe health issues which include cancer and cardiovascular diseases as well as developmental disorders. Public health protection in places where drinking water is contaminated with arsenic depends largely on successful methods that reduce arsenic contamination in drinking water. A scoping literature review was conducted to assess different arsenic drinking water treatment methods in databases Springer Nature Link and Medline. Search terms were the following terms: arsenic drinking water removal, arsenic drinking water treatment and arsenic drinking water technology together with arsenic drinking water mitigation strategies. This review analyzes 18 peer-reviewed studies that fit the inclusion criteria. The presentation will discuss technological solutions to arsenic contamination of drinking water including the feasibility of deployment in low-income settings, efficacy and implementation challenges.

Mbaka, Levi

Navigating Financial Stress: The Impact on Academic Performance and Social Engagement Among International Students

As the number of international students in American universities continues to grow, understanding the unique challenges they face becomes increasingly critical. Through qualitative interviews with participants from the international college student community at William Paterson University, this study aims to uncover how financial burdens influence their educational experiences and social interactions. This study particularly focuses on African international students, addressing the noticeable gap in existing literature regarding this demographic. The anticipated outcomes of this research are twofold: to highlight the pervasive impact of financial stress on academic success, and to identify potential areas of support that universities can provide to help international students thrive both academically and socially. Ultimately, this study aims to contribute to the broader discourse on student well-being and offer insights that can influence policy and support systems dedicated to international student populations.

Mungo, Lamonica

Surrounded By Hazards: Nursing Students Perceptions of Occupational Hazards in a Nurses' Workplace

Nurses, comprising 12% of the global workforce, face significant occupational hazards, contributing to high rates of low back pain (82.7%), burnout (78.3%), and injuries (70.5%), coupled with insufficient workplace safety (90.6%). Because occupational hazards are so significant for nurses, this research investigates undergraduate nursing students' awareness of these hazards, which range from acute incidents to chronic conditions, affecting both individual nurses and the healthcare workforce. Understanding this knowledge gap is crucial for ensuring nurse safety and a sustainable healthcare system. A cross-sectional survey was conducted using Qualtrics to assess UDC III- and UDC IV-year nursing students' knowledge of occupational hazards. The survey instrument included questions on radiation safety, handling chemotherapeutic agents, and the prevention of musculoskeletal injuries among other topics. WPUNJ IRB approval was obtained. This presentation will detail key survey findings, focusing on senior nursing students' current knowledge of these critical occupational health and safety issues.

Murakami, Taku

The Legacy of Ryuichi Sakamoto and "Merry Christmas, Mr. Lawrence"

Ryuichi Sakamoto, a composer, musician, and producer, has worked in a wide range of genres including classical music, electronic synth-based music, popular music, and film scoring. His work in scoring many well-known movies has been recognized globally and has also heavily influenced many composers around the world. In this paper we focus specifically on one of his songs, "Merry Christmas, Mr. Lawrence", which shares its name with the eponymous film, released in 1983. We discuss the structure of the harmony and melody in the film score, which also has been widely referenced in contemporary music in Japan. Our study investigates songs and releases by various artists who use similar harmonic and melodic structuring as Ryuichi Sakamoto.

Nelson, Hailey

The Athlete's Ability to Turn Off Pain

This study investigates the relationship between athletes' perception of pain and their willingness and determination to continue playing in sports. The data will be collected from college athletes through an anonymous online survey that assesses each athlete's pain, injury history, and their willingness to continue playing. Data will be analyzed using quantitative and qualitative techniques. The objective of this study is to identify patterns in athletes' perceptions of pain and their determination to continue playing their sport which should foster a deeper understanding of pain tolerance in athletes and assist with future injury management.

O'Brien, Mackenzie

Assessing College Students' Access to and Satisfaction with Campus Mental Health Resources

This study examined barriers to accessing campus mental health resources. Common obstacles include stigma, lack of awareness, long wait times, and uncertainty about service effectiveness. Student-athletes face additional challenges due to demanding schedules, making it harder for them to seek support. The survey assessed perceptions of these resources and found that awareness and peer influence significantly impact utilization. Students who believed none of their peers used mental health services perceived them as less helpful than those aware of peer usage. Additionally, misinformation or lack of discussion about these services contributed to negative perceptions. Findings suggest that improving communication and increasing awareness may be more effective in encouraging engagement than focusing solely on athlete-specific barriers. Institutions should implement broad outreach strategies to enhance accessibility and knowledge for all students. This study highlights the role of perception in mental health resource usage and suggests targeted awareness efforts as a key strategy for improving engagement in higher education settings.

O'Donnell, Katherine

*UBC Primer 810 As A Tool for Determining Genotypic Diversity of *Ammophila breviligulata* (American Beachgrass) In New Jersey*

New Jersey's coastal dunes provide a habitat and infrastructure protection along the state's shoreline. Restoring New Jersey's coastal dunes involves single-genotype plantings of the 'Cape' variety of American Beachgrass (*Ammophila breviligulata*) for dune stabilization. However, it is questioned whether single genotype plantings provide long-term sustainability and ecosystem function. A baseline of native diversity in New Jersey populations of *A. breviligulata* were developed using Inter-Simple Sequence Repeat (ISSR) markers, used to demonstrate high genotypic diversity of three native populations in New Jersey; Including foredune populations which showed moderate diversity in the single mid-dune population analyzed (Slaymaker et al., 2015). ISSR markers were used to measure genotypic diversity across a successional gradient, from fore-dune to rear-dune. Genomic DNA preparation of mid-dune samples and initial work with UBC Primer 810 will be presented. The study will provide a greater understanding of *A. breviligulata* biology and may influence future dune restoration efforts.

Owonla, Aishat

“What are the implications of teenage pregnancy on teenagers physically, social, and economically?”

Teenage pregnancy, defined as pregnancy occurring between the ages of 13 and 19, presents significant challenges that impact young mothers and their children. These challenges are physical, including higher risks of complications during pregnancy; social, such as stigma and isolation; and economic, involving difficulties with education and financial stability. A systematic review was conducted for this study to gather and analyze existing research on the implications of teenage pregnancy on young girls aged 13 to 19. Another reason for completing this review is to help policymakers, healthcare providers, readers, and community organizations make better decisions surrounding teenage mothers. The literature was searched using databases such as PubMed, Cochrane Library, and Scopus, and over 35 articles were reviewed. Results indicate that teenage pregnancy increases the risk of health complications like anemia and preterm labor, along with social stigma, mental health challenges, and financial difficulties due to interrupted education. The study highlights the critical role of family support, accessible healthcare, and comprehensive sex education in improving outcomes and reducing pregnancy rate. Understanding these challenges is key to creating effective policies and programs to help young mothers and reduce teenage pregnancy rates.

Pantoliano, Daniel

Rebuilding Commercial Real Estate After COVID-19: What's Next for Office, Retail, and Warehouse Spaces?

I will explore the future of the commercial real estate (CRE) market, examining how it is shifting away from traditional concepts due to pandemic-driven trends. I will analyze the state of CRE before the pandemic, emphasizing the growth of online shopping, flexible offices, and the increasing role of technology, using research from reputable real estate firms and universities. Next, I will investigate the pandemic's impact, particularly the surge in remote work and e-commerce, and how this has transformed demand for office space and retail environments, citing examples from companies like Amazon. Finally, I will address major trends shaping the future of CRE, and how these changes are altering investment strategies, focusing on real estate investment trusts (REITs) and crowdfunding. My research will provide a comprehensive understanding of the evolving CRE landscape.

Pantoliano, Patrick

Alpha Securities Business Plan

This business plan presents the strategic vision and operational framework for Alpha Securities, a new financial services firm. The plan offers a comprehensive analysis of the firm's mission, objectives, and the industry landscape, highlighting key market opportunities and competitive positioning. It also details service offerings, revenue model, management structures, and marketing strategies designed to drive growth and client acquisition. Additionally, the plan includes financial projections, risk assessments, and actionable strategies to position Alpha Securities as a trusted player in the financial services sector, while delivering long-term value to clients.

Peralta, Jason

A World on Fire and Underwater: Exploring the Health Risks of Climate Change for Indigenous Communities

Climate change poses significant threats to Indigenous health, particularly in Kiribati and the Amazon Rainforest. Rising sea levels endanger Kiribati's freshwater supply and food security, while intensifying forest fires in the Amazon contribute to respiratory illnesses and ecosystem destruction, disproportionately affecting the Indigenous communities. My research explores the question: how is climate change affecting Indigenous health? Using a case study approach, I analyze Kiribati and the Amazon to highlight climate change impacts and their human health consequences. Through content analysis, I examine documentaries and academic literature to assess these impacts. Scholarly sources will inform my analysis of environmental health outcomes. My presentation will cover climate-driven health concerns in Kiribati and the Amazon, emphasizing displacement and air pollution. Understanding Indigenous perspectives is crucial as these communities hold deep ecological knowledge yet face systematic marginalization. Climate change is not only an environmental crisis but also a public health emergency, necessitating urgent action.

Ponce, Danielle Nicole

An Integrative Review: The Migration Experiences of Filipino Nurses

The global nursing shortage continues to affect healthcare systems such as hospitals and nursing homes, resulting in reduced quality care. In response, healthcare systems have turned to recruiting nurses from countries such as the Philippines. This systematic review focused on the experiences of Filipino nurses migrating to work in Western countries such as the United States and the United Kingdom. Using the PRISMA guide, literature was selected through electronic databases such as CINAHL and PubMed. The study included peer-reviewed articles about Filipino nurses in Western countries published between January 2001 and December 2024. Selected articles primarily discuss topics such as experiences, expectations, struggles, or migration decisions. The analysis provided insights into the migration experiences of Filipino nurses and inform strategies for healthcare systems to recruit and retain immigrant nurses as part of the solution to the global nursing shortage.

Prajapati, Honey

In-Silico Analysis of NPM1 Mutations in Acute Myeloid Leukemia

Functional Analysis through Hidden Markov Models (FATHMM) tool was used to classify mutations in the NPM1 gene as either neutral or cancerous. The NPM1 gene is highly prevalent in Acute Myeloid Leukemia (AML), making its classification crucial for clinical intervention. An in-silico analysis of NPM1 mutations was stimulated by running a total of 264 missense mutations. The model classified a small number of mutations as cancerous, indicating only a few driver mutations whose molecular consequences lead to AML. A FATHMM score was assigned to each mutation screened, and all the cancerous mutations received a score lower than the default threshold. The results may have clinical implications for early AML screening, with the reduction of a large set of mutations to a few that can be examined against true AML malignancies in the literature. Furthermore, these findings highlight the potential utility of these mutations as biomarkers for the diagnosis of AML.

Radigan, Thomas

Examining the Effects of Performance Anxiety and its Management in Athletics

Performance anxiety is a prevalent issue among athletes, often leading to physiological and psychological responses that hinder performance. This study empirically examines the effects of performance anxiety and its management strategies in athletics. A heart monitor was worn during competitive baseball games to measure physiological responses, particularly heart rate fluctuations. Additionally, propranolol, a beta-blocker known for its anxiety-reducing properties, was administered to assess its impact on heart rate regulation during competition. The findings provide insights into the effectiveness of propranolol in mitigating anxiety-induced physiological symptoms. Furthermore, this research explores alternative anxiety management techniques, including breathing exercises and visualization, evaluating their role in enhancing athletic performance. The results contribute to the broader understanding of anxiety management in sports, offering practical implications for athletes seeking to optimize their mental and physiological readiness for competition.

Rice, Shae

The Positive Effects of Expressive Writing on the Psyche

This blog invites readers to engage in expressive writing by exploring their emotions through written personal narratives. Expressive writing, which responds to structured and targeted prompts, can often yield long-term positive effects on mental health. By meticulously analyzing personal experiences and the associated feelings, individuals gain insights into their emotional well-being, facilitating healing and personal growth. The blog features various writing prompts, including those by notable authors who have researched the advantages of utilizing expressive writing as a means of stress reduction. Additional prompts, developed by me, encourage reflection on past and present challenges. These prompts, which promote clarity and resilience, guide visitors to my blog to articulate their deepest emotions related to significant events. The creative project aims to illuminate the distinction between journaling and expressive writing while emphasizing the latter's potential as a valuable tool for facing life's challenges.

Ryan, Sabrina

Refining Modern Temperature Calibrations of Organic Biomarkers in U.S. East Coast Lake Sediments for Paleoclimate Reconstructions

As climate change and its devastating effects grow stronger, the need to understand climate trends of the past increases dramatically. One way to do so is analyzing climate proxies. One such proxy, RAN13, comes from 3-hydroxy fatty acids (3-OH-FAs) found in membranes of bacteria. The ratio of anteiso to normal C isotopes 3-OH-FA can tell us about past temperature in lake environments. In this study, samples of lake sediments from 21 sites along the U.S. East Coast were analyzed and values were compared to mean annual air temperature (MAAT). RAN13 was shown to have a strong correlation with MAAT and is unaffected by seasonal changes or organic carbon and nitrogen runoff. Levels were not correlated with temperature, indicating that quantity of plant matter does not affect biomarker data. RAN13 was determined to be a strong climate proxy, and was applied to a lake sediment core, closely matching historical data.

Selmani, Arnelda

Lessons from Oregon's Approach to Drug Reform

The opioid crisis remains an ongoing public health issue in the United States. According to the National Institute on Drug Abuse, approximately 2.5 million adults had an opioid use disorder in the past year. U.S. approaches to drug use are characterized by a criminal justice framework over a public health approach, emphasizing treatment and harm reduction. Oregon's Measure 110 marked a shift in drug policy by decriminalizing small amounts of illicit drugs and investing in recovery services but was repealed on September 1, 2024. This case study examines Oregon's motivations for decriminalization, the challenges in implementation, and debates surrounding the law. Using a case study approach, it analyzes online news sources, academic journals, and testimonies to create a timeline of events before the law passed and after its appeal. By exploring public health's role in policy debates, this study aims to identify key lessons for improving future drug policy reforms.

Senman, Hava

Living Slow

My thesis explores varying alternatives to our current work-driven lifestyles and introduces Slow Living to a wider audience. Slow living focuses on living in the moment and instilling purpose in our actions, emphasizing a life filled with intention, pleasure, and joy. My project is influenced by key figures in the movement, like Carl Honore, and studies which prove an increase in quality of life when individuals incorporate slow living practices into their lives. My podcast highlights different ways to improve the quality of life in a time focused on speed, offering impactful stories from individuals who have benefited from this mindset switch. I also conducted a personal experiment alongside the creation of the podcast which applied these principles to my daily life. By combining these elements, my podcast educates the viewers about the Slow Living Movement and encourages them to reflect and feel inspired to live a more mindful, present life.

Shakhshir, Waseem

Resistance Symbolism in Palestinian Music

This research explores the use of resistance symbolism in Palestinian music, investigating how musical expressions have become powerful vehicles for political and cultural rebellion amidst the ongoing Palestinian struggle. The study examines a wide spectrum of musical genres, ranging from traditional folk songs like "Mawwal" and "Dabke" to contemporary forms, such as hip-hop and rap, with a focus on how these genres carry distinct dimensions of resistance and national identity. By analyzing lyrics, melodies, and rhythms, this research sheds light on the role of music in documenting historical events, promoting collective memory, and conveying messages of resilience, defiance, and hope. The research also considers the personal narratives of Palestinian musicians, investigating how their work navigates the complex dynamics of identity, diaspora, and resistance. Through a multifaceted approach, including musical analysis, artist interviews, and historical context, this paper contributes to a deeper understanding of how Palestinian music transcends art to serve as an active form of political expression and solidarity within a global resistance framework.

Shehadeh, Amjad

Honeybee Gut Microbiome

The honeybee (*Apis mellifera*) plays a crucial role in pollination, supporting plant biodiversity and enhancing the quality of fruits and vegetables. Understanding its gut microbiome is vital, as it influences digestion, immunity, and overall colony health. This study investigates how seasonal changes affect honeybee gut bacteria by comparing 24 honey frames from adult bees and 24 brood pollen samples from the lower hive. The honeybee gut microbiome consists of a few core bacterial groups, allowing efficient tracking of changes. We focused on five major bacterial groups and used quantitative polymerase chain reaction (qPCR) to evaluate the efficiency and accuracy of different primer sets with pooled gut DNA extractions. Due to the dominance of a small number of taxa, tracking microbiome shifts is cost-effective and feasible. By optimizing PHIRE polymerase and refining qPCR methods, we aim to enhance sensitivity and reliability in measuring bacterial abundance. Understanding seasonal variations can help improve colony survival strategies.

Skupienski, Misty

Learning to Love Myself Through BTS: K-pop and the Teen Mental Health Crisis

My thesis looks at the Korean pop (K-pop) group BTS's innovative efforts in tackling teen mental health. Adolescents in today's global society are face-to-face with a severe mental health crisis. Music is one way that young people are coping with distress. Groups such as BTS have been using their platform to spread important messages about mental health in South Korea despite the stigma surrounding it in Korean culture. My sources encompass interviews with BTS, social media, public campaigns, and fan reactions to the problem of teen mental health and the ways in which BTS face it. The results of my thesis demonstrate how fans are reacting positively, the effectiveness of BTS's mental health efforts, and how their partnership with UNICEF is taking their message worldwide. My thesis reveals the power of young people helping each other address the current youth mental health crisis and suggests ways forward for other societies.

Spink, Madelynn

The Impact of Injuries on the Mental Health of Athletes

Athletics are a great way to stay active and live a healthy lifestyle, although sometimes injuries may interfere with an athlete's career. When an injury occurs, physical pain is typically the only distress visible to spectators, teammates, and coaches. The mental stress and struggle suffered by an athlete are not as observable. As injuries in athletics are on the rise, it is important to study the psychological impact of these injuries. It is an impact that can last throughout the recovery process. This paper reviews the empirical research literature on the psychological effects of injuries, the effect on the social well-being of athletes experiencing an injury, the fears of returning to play, and the final acceptance of ending a career in a sport(s) due to an injury.

Steinel, Ricky

How Composers Create Tension and Release

One of the greatest tools for musical expression is the creation and resolution of tension, which helps listeners engage and connect. My project focuses on various techniques used to create and resolve tension in music, citing examples by composers including Sergei Rachmaninoff (1873–1943), Frédéric Chopin (1810–1849), Franz Liszt (1811–1886), Maurice Ravel (1885–1937), Alexander Scriabin (1872–1915), and Erik Satie (1866–1925). Techniques employed by these composers include sudden modulations, gradual key changes, and unexpected resolutions, each contributing to a piece's energy and emotion. A key part of these techniques is a cadence, which often marks the conclusion of a phrase, leading to a full or partial resolution. Understanding these techniques provides insight into how composers utilize them to shape the expressive and emotional nature of a piece.

Subba, Digvijay

Alpha Securities Business Plan

This business plan presents the strategic vision and operational framework for Alpha Securities, a new financial services firm. The plan offers a comprehensive analysis of the firm's mission, objectives, and the industry landscape, highlighting key market opportunities and competitive positioning. It also details service offerings, revenue model, management structures, and marketing strategies designed to drive growth and client acquisition. Additionally, the plan includes financial projections, risk assessments, and actionable strategies to position Alpha Securities as a trusted player in the financial services sector, while delivering long-term value to clients.

Subba, Janmajay

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Teixeira, Alexa

The Effect of COVID-19 on the Mental Health of Post-Secondary Education Students

The Covid-19 pandemic profoundly impacted the mental health of college students, exacerbating stress, anxiety, and depression due to academic disruptions, social isolation, and financial instability. This study aims to explore the psychological effects the pandemic had on college students by analyzing data from multiple sources to identify key stressors and coping mechanisms. Previous studies indicated that students struggled with maintaining a good mental health status and challenges with motivation. Despite the increased mental health challenges, professional support services were underutilized, as many students preferred informal sources of support. Through the use of an online survey of 100 college students, this study seeks to explore mental health pre-, during, and post-pandemic, different coping mechanisms used by participants and the support provided by academic institutions. The study highlights the urgent need for universities to enhance mental health services by providing structured interventions, and strong support outlets to equip students for future crises.

Timmons, Alanna

Singing and the Aging Voice: Acoustic Analyses of Professional Singers and Orators

The voice tends to degrade across the lifespan, but there is evidence that singing may mitigate the damage. To examine this issue, a quantitative analysis compared speaking archives from famous singers and orators spanning 3-decades. This study examines aging effects on vocal characteristics in professional singers and orators by analyzing speech disfluencies. Speech samples from 10 singers and 10 orators were analyzed longitudinally for fundamental frequency, jitter, shimmer, and harmonic-to-noise ratios (HNR) using PRAAT. Specific analyses targeted whether there was a correlation between age and vocal characteristics of singers and orators and the degeneration of their vocal health. Analyses revealed lifespan differences between singers and orators. Singers had more consistent HNR, while orators' HNR declined with age. Additionally, female orators showed a greater decrease in fundamental frequency over time compared to female singers. This study seems to suggest advantages in the vocal health of singers in late life.

Uddin, Jakia

The Role of Tyrosinase in Detoxifying Aldehydes and Preventing Protein Carbonylation

Lipid oxidation generates reactive aldehydes like malondialdehyde (MDA) and 4-hydroxynonenal (4-HNE), which contribute to (secondary) protein carbonylation and neurodegeneration. Tyrosinase, a copper-containing oxidase primarily involved in melanin synthesis, may also (co-) catalyze aldol condensation reactions that detoxify these aldehydes, potentially mitigating oxidative damage. Docking studies suggest the presence of an active site, distinct from the canonical active site, capable of catalyzing condensation reactions between aldehydes and enamines, thus facilitating amino acid catalyzed aldol condensation. Inhibition studies using α -Cyano-4-hydroxycinnamic acid (HCCA), known to bind to tyrosinase's canonical active site, were unable to verify that tyrosinase catalyzes condensation reactions at a distinct active site but rather suggest that even inhibitors of tyrosinase's oxidase activity may bind at multiple sites. We are currently exploring whether infrared spectroscopy, already used to quantify primary protein carbonylation, can quantify secondary protein carbonylation in order to elucidate how tyrosinase catalysis of condensation reactions impacts protein carbonylation.

Uddin, Zubayedra

The role of the cell wall integrity pathway in antifungal resistance in the opportunistic pathogen Candida glabrata

Candida glabrata is a fungal pathogen that causes invasive infections in immunocompromised individuals. The cell wall integrity (CWI) pathway, including the Slr2 kinase, play an essential role in fungal tolerance to antifungal drugs. Previous work in our lab revealed that SLT2 disruption reversed resistance in echinocandin-resistant FKS2 mutants but not in an FKS1 mutant. I aimed to further investigate the role of SLT2 in both echinocandin and triazole resistance. First, I complemented the phenotype we observed in the FKS2 mutants disrupted for SLT2 by reintroducing SLT2 on *C. glabrata*-specific plasmids via a gap-repair cloning technique. Then, I disrupted SLT2 in two triazole-resistant (PDR1) mutants. Disruption was confirmed in PCR assays utilizing gene-specific primers. Drug susceptibility assays showed deletion of SLT2 resulted in no significant changes in triazole resistance. We conclude that the CWI pathway and SLT2 are required for Fks2-mediated echinocandin resistance but not triazole resistance in *C. glabrata*.

Valle, Kamberly

Peaceful Nature

My thesis is an art series called *Peaceful Nature*. My paintings represent the beauty of nature and how nature cares for its creatures in a way that provides for their survival. I intended this project to include fantastical elements, brighter colors and multimedia details. The first work inspired two more pieces that I show today. These two pieces are smaller and more intimate and a bit more realistic, although mostly done with acrylic in a more mosaic style. I incorporate natural elements with trees and the forest floor. They are representations of the animals' exterior beauty and their physical struggle for survival and care for the next generation. The two pieces I am most happy with emerged by mixing my aesthetic with inspirations from other animal artists, such as Lachri and Jodi Bergsma. The browns and greens in my work as well as the thick strokes speak to their styles. My experiment taught me a lot about my artistic vision and what I enjoy as an artist.

Vega, Arianna

Contributing Factors of Depression in Undergraduate Nursing Students

The pressure of nursing school can have a significant impact on the mental health of undergraduate nursing students. More specifically, there has been a rapid increase in depression rates within this population. This integrative review explores the contributing factors of depression in undergraduate nursing students. Using the PRISMA guidelines and searching three databases, a literature search has been conducted using CINAHL, Medline via PubMed, and ScienceDirect. The search terms included were "factors of depression" and "undergraduate nursing students." The eligibility criteria was inclusive of nursing journal articles that were published between 2018 and 2024, in the English language, and completed with human subjects (undergraduate nursing students). A total of 15 articles were used for this review. The findings showed that depression in undergraduate nursing students results from educational stress and academic pressure, demographic factors, geographic and cultural influences, and mental health and well-being.

Westervelt, Isabella

Identifying Potential Regulators of mrp Expression in Marinobacter Adhaerens

Our lab studies *Marinobacter adhaerens*, a gram-negative bacterium that associates with harmful algal bloom-producing dinoflagellates. A previous bioinformatic study identified two homologous multigene cation/proton antiporter clusters in the *M. adhaerens* genome: an *mrp* gene cluster adjacent to a *pha* gene cluster. These antiporters couple proton export with cation import and have roles in pH homeostasis, cation resistance, biofilm formation, and pathogenesis in other bacteria. This study used β -Galactosidase assays to investigate *mrp* cluster expression in varied external pH and salt conditions. We found increased expression in elevated [KCl] and pH conditions, which disagrees with complementary real-time qPCR data, suggesting potential translational regulation. Potential regulators will be identified using transposon mutagenesis, wherein a transposon carrying kanamycin resistance will be conjugated into *M. adhaerens* with *lacZ* attached to the *mrp* promoter. Candidates with mutations in regulatory genes will be identified by differences in color intensity, when plated with X-gal and kanamycin.

Wood, Ben

Indigenous Healthcare: A tale of Disparities and Neglect

Throughout history in the United States, the Indigenous population has dealt with countless relocation, harassment, and abuse at the hands of colonization and the United States government. Although no war has been had for many years, Indigenous people continue to experience institutionalized racism with a deep history of forced integration and change of culture. As of 2023, Indigenous people were 10% more uninsured than the overall US population (ASPE 2024). Furthermore, Indigenous women have the highest pregnancy-related mortality rate in the United States (Hill, 2024). In this study, I will be exploring the relationship between the historical and current treatment of Indigenous Americans, and how that negatively impacts their health and healthcare in different ways with evaluative research. The research will include studies, census data, and different public healthcare programs in the United States to evaluate the best next steps to improve Indigenous life in the country.

Yany, Kaitlin A.

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Youn, Daniel

Are Individuals who Experience Adverse Childhood Events (ACEs) More Likely to Develop a Chronic Illness?

Adverse childhood experiences (ACEs) are traumatic experiences before the age of 18. This systematic review explores the relationship between ACEs and the risk of developing chronic diseases in adulthood. Using PRISMA guidelines, 15 peer-reviewed articles from 2014 to 2024 were reviewed. In the research, it has been found that there is a relationship between ACEs and an increased risk of adulthood chronic illnesses. Physical manifestations of this include cardiovascular disease, respiratory disease, and diabetes. Psychological manifestations of this include depression, PTSD, and anxiety. Furthermore, ACEs also have a relationship with an increased likelihood of health-risk behaviors and social adversities that make health disparities even more dramatic. The study proposes the need for early intervention to prevent long-term health consequences. The effectiveness of this preventative intervention must be reviewed in future studies.

Zon, Julia

Effectiveness of Violence Prevention in the Emergency Department
Emergency department (ED) violence is a growing global issue with various contributing factors. Implementing preventive measures has proven beneficial in enhancing patient care and staff safety. This integrative review examines the effectiveness of existing strategies to mitigate aggression in EDs. A systematic literature search was conducted using databases such as Medline via ProQuest, Science Direct, CINAHL, BMJ Best Practice, and Cochrane Library, including studies from 2000-2024. Findings highlight the significance of mandatory staff training, behavioral risk assessment tools like STAMP, DASA, and ABRAT-ED, and security improvements such as increased personnel and weapon detection systems. Organizational changes, including reducing ED overcrowding and optimizing staff workloads, were also identified as crucial factors. While training and security measures show improvements, violence remains underreported, necessitating improved reporting systems and further research. A multifaceted approach integrating education, risk assessment, and security enhancements is essential for fostering a safer ED environment for both patients and healthcare workers.

Zuta, Diana*Effects of aerobic exercise and music on cognitive function*

Extensive studies have found a relationship between aerobic exercise and cognitive function in older adults, providing evidence of improved attention span, memory, and other functions mediated through enhanced cerebral blood flow and release of brain-derived neurotrophic factor (BDNF). Studies have also found that music has the potential to enhance cognition. When music is paired with aerobic exercise, it can positively influence an individual's mood and enhance neural activation and motivation. Previous research indicates the tempo of music plays a huge role in the way it affects the individual compared to exercise only and control groups. In addition, synchronizing music tempo with movement has been associated with enhanced physiological and psychological outcomes. This literature review will focus on the effects of music and how it affects an older individual's cognitive function and mood during exercise, with the goal of determining whether slower or faster tempo music will offer the greatest benefit. The results aim to demonstrate how music paired with aerobic exercise enhances cognitive function in the aging-population.

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