

OFFICE OF THE PRESIDENT

December 10, 2021

Dear Campus Community:

Welcome to the fifth annual fall celebration of the Center for Undergraduate Research and Creative Activity (CURCA).

CURCA Director Dr. Lamis Jarvinen and the CURCA Committee have worked diligently to continue this tradition to recognize the impressive work of students and faculty.

Although we had hoped to celebrate these achievements in-person we are thankful for the opportunity to virtually share this admirable collection of projects.

At this event each semester, Westfield State students showcase their intellect and scholarship, putting their classroom knowledge gained to the test through research and creative avenues, both on campus and in experiential learning and internships. This critical involvement propels students to pursue advanced degrees and challenging careers.

The University benefits greatly from the many dedicated faculty members who generously lend their talent and expertise to serve as mentors and support undergraduate research projects.

I am eager to see the results of this innovative work by our students and hopeful that they will continue to explore original research in collaboration with faculty members to satisfy their intellectual curiosity.

Congratulations to our presenters and best wishes to attendees as you explore this scholarly display.

Sincerely,



Linda Thompson, DrPH, MPH, RN, FAAN
President

CENTER FOR UNDERGRADUATE
RESEARCH AND CREATIVE ACTIVITY

Welcome to our 2021 Fall CURCA Celebration!

The CURCA celebration is an exciting time for our campus as we come together to showcase the research and creative work of Westfield State students across all disciplines. On behalf of the CURCA committee, congratulations! It is an honor to host this student event and to highlight WSU's commitment to student-applied experiences.

All participating students have explored the process, research, outcomes, and application of their knowledge and creativity to real-world issues. Whether through classroom-embedded work, independent research, or internships, these experiences provide students with an opportunity to develop and demonstrate their skills, making them competitive prospects.

Despite continued challenges with the pandemic, WSU faculty provided meaningful and impressive array of opportunities for students to engage in the process of research. This Celebration highlights the work of over 250 students, presenting work that spans over 125 research and creative projects from all three Colleges. Our Celebration is further enriched by our keynote poet, Elizabeth Sears, English and Communication Major reciting her original work entitled "Asexual Poem" and Samuel Massoud, Music Composition Major performing "Bluebird" by Alexis Ffrench (1970-). Their performance is highlighted on our Celebration homepage.

Acknowledgments

There are so many people to thank! First and foremost, much gratitude goes to students for their contributions and faculty mentors for their tireless work in ensuring project success! Thank you to President Dr. Linda Thompson, Provost and VPAA Dr. Juline Mills, and Academic Affairs for prioritizing undergraduate research and creative activity through funding and advocacy. The amazingly dedicated CURCA advisory board members; Prof Roderico Acevedo, Louann D'Angelo, Prof Anthony Furnelli, Prof George Ramirez, Prof Amanda Salacinski, and Prof Robin White for their unparalleled dedication, insights, and support to foster institutional growth and engagement in research and creative activity. Thank you to Thomas Howard, CURCA Graduate Assistant, for his work in helping me create a beautiful CURCA Celebration website and Gretchen Konrad, Administrative Assistant, for her dedication, communication, and careful editorial efforts in helping me create this booklet.

Thank you all!



Lamis Jarvinen, Ph.D.

Director, Center for Undergraduate Research and Creative Activity

CURCA Virtual Opening Ceremony



Scan QR code or visit <http://www.curca.westfield.ma.edu/>

Welcome Message

Dr. Linda Thompson, President Westfield State University

Dr. Lamis Z. Jarvinen, CURCA Director

Keynote Poet and Musician for Opening Ceremony

Elizabeth Sears '22 English & Communication Major – “Asexual Poem”

Samuel Masoud '23 Music Composition Major – “Bluebird” by Alexis Ffrench (1970-)

Live Synchronous Student Presentations – Dec. 10

12:00 – 1:00 pm Digital Storytelling

12:30 – 1:30 pm Jarrod Petersen '19 Alumnus, Biology Seminar Series

1:00 – 2:00 pm 2021 SSuRF Research Presentations

2:00 – 3:00 pm Persona Open Mic



Scan QR code for zoom links or visit <http://www.curca.westfield.ma.edu/>

2021 Student Summer Undergraduate Research Fellows (SSuRF)

This highly competitive research award provides students with an opportunity to engage in a 10-week intensive summer research or creative activity project with a Westfield State University faculty mentor.

Applications for summer 2022 are being accepted now through March 25, 2022. For more detail visit Westfield CURCA resource page

<https://www.westfield.ma.edu/academics/undergraduate-research/program-offerings/students>

Samantha Falcone '22, Biology

Faculty Mentor - Professor Jason Ramsay

Functional morphology of the feeding apparatus in chain pickerel,

Esox niger: Adaptations of manipulation and consumption of large live prey.

Olivia Murphy '23, Chemistry

Faculty Mentor - Professor Roderico Acevedo

In silico enzyme modification of dihydrofolate reductase (DHFR)

Amber Stearns '22, Environmental Science & Geography, Planning, and Sustainability

Faculty Mentor - Professor Lauren DiCarlo

*Floodplain ecosystem response to the removal of Euonymus alatus
(winged burning bush) in Westfield, MA*

Grace Templeton '22, English

Faculty Mentor - Professor Michael Filas

On Motherhood and Mothering: Mourning What I Lost When I Became a Mother

Matthew Wandishion '22, Biology

Faculty Mentor - Professor Mao-Lun Weng

Analyzing Gut Microbiome Composition in Canines Afflicted with Acute Moist Dermatitis

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** After Project Title Indicates Video or Audio Component Included Online*

College of Arts, Humanities and Social Sciences

English

Paige Barrow '23, Social Work; **Joseph Cuscuna** '22, Communication

Faculty Sponsor: Professor Vanessa Diana

Relationship Between Societal Oppression and Alcoholism Among Native American Communities*

In the novel *There There* (2018), author Tommy Orange, from the Cheyenne and Arapaho Tribes of Oklahoma, brings to light the many struggles of alcoholism and substance abuse among the Native American population. This project will dive into societal oppression and intergenerational problems that have caused increased alcoholism among Native American communities and interventions that can be put in place to fight this problem.

Samantha Biseinere '23, Biology and Health Sciences

Faculty Sponsor: Professor Vanessa Diana

Native Americans' Use of Social Media to Celebrate Indigenous Culture*

In the novel *There There* (2018), Cheyenne and Arapaho author Tommy Orange includes the character, Orvil Red Feather, who is a young Native American who turns to social media to learn more about powwow dancing. This project will analyze the use of social media, such as Youtube and TikTok, by Native American youth to connect with their culture and create awareness of their cultural practices.

Jonathan Brady-Prankus '23, Criminal Justice; **Timothy Curry** '22, Chemistry; **Madison Migiano** '24, Criminal Justice

Faculty Sponsor: Professor Vanessa Diana

Alcoholism Among Native Americans**

In the novel *There There*, Tommy Orange, a member of the Cheyenne and Arapaho tribes of Oklahoma, reveals problems with alcoholism that have occurred with some of the characters. This project reveals problems and solutions of alcoholism within Native American communities.

Hannah Burns '23, Nursing; **Katrina Dong** '23, Health Science; **Myranda Nasworthy** '23, Communication

Faculty Sponsor: Professor Vanessa Diana

Violence Against Native American Women*

In the novel *There There* (2018), Cheyenne and Arapaho author Tommy Orange includes characters named Jacquie Red Feather and Blue, who are depicted as victims of sexual assault and domestic violence. This project will research the statistics and cases of violence against Native American Women, with the goal to discover why it has gone unnoticed, and to bring awareness to this significant issue in order to break the silence.

Sarah Chambers '22, Athletic Training; **Colleen Hughes** '22, Athletic Training; **Alexis Wood** '22, Athletic Training

Faculty Sponsor: Professor Vanessa Diana

Reflecting on the History and Mistreatment Within the Carlisle Indian Industrial Boarding School*

In the screenplay, *The Moon in Two Windows* (2007) by N. Scott Momaday (Kiowa), he highlights many examples of mistreatment against Native Americans within the Carlisle Indian Industrial Boarding School. This project will zoom in on those incidents and their effect on the Native American students' connection to their culture and identity.

Kaitlyn Chiasson '24, Psychology; **Colleen Fellows** '24, Psychology

Faculty Sponsor: Professor Vanessa Diana

Specific Forms of Rehab for Native American Substance Abuse*

In the novel *There There* (2018), Cheyenne and Arapaho author Tommy Orange, highlights the struggles of substance abuse Native Americans endure through one of the novel's main characters, Thomas Frank. This project will analyze the traditionally specific rehab treatments Native Americans should have access to while on their journey to achieving sobriety.

Emma Cowhey '21, Environmental Science

Faculty Sponsor: Professor Vanessa Diana

"We're Going to Be with Our Relatives, Indians of All Tribes": The 1969 Occupation of Alcatraz*

Tommy Orange, the Cheyenne, and Arapaho author of the novel *There There* (2018), features characters' past during the American Indian Movement Occupation of Alcatraz. This project will analyze the nineteen-month occupation of Alcatraz Island bringing attention to injustices confronting Native Americans.

Mason Cronin '24, Criminal Justice

Faculty Sponsor: Professor Vanessa Diana

The Importance of Native American Dances*

In the short story *First Fruits* by Standing Rock Sioux author Susan Power, the main character is a Dakota girl who loses her sense of self while trying to assimilate in a college environment, until the end of the story, when she finds herself again by teaching a Native American "Swan Dance" to her friend. This project will look at how and why dances are so important to Native American communities and what makes them unique from other dances around the world.

Ava Diggs '24, Communication; **Mia-Angelina Leslie** '24, Business Management

Faculty Sponsor: Professor Vanessa Diana

The Great Paradox of Native American Reservations*

In the poem *When The Light of The World Was Subdued*, author, Layli Long Soldier, Oglala Lakota, retells the forced removal of the Sioux tribe from their vast land by the U.S. government, and crowded onto a small reservation in Minnesota. This project will address the complications that Native Americans experience while living on a modern day reservation, such as poverty, domestic violence, and alcoholism.

Mihail Dobrin '22, Computer Information Systems; **Brendan Rooney** '22, English

Faculty Sponsor: Professor Vanessa Diana

Contemporary Native American Powwows and the Presence of Hope*

In the novel *There There*, Cheyenne and Arapaho author Tommy Orange centers the story around a powwow and through that depiction suggests the presence of hope. This project will research the historical significance of powwows and those involved in them while analyzing the connection between powwow traditions and hope in Orange's novel.

Levi Ekstrom '23, Criminal Justice and Ethnic & Gender Studies

Faculty Sponsor: Professor Vanessa Diana

Significance of Native Powwow Regalia and How They are Made*

In the novel *There There* (2018) by Tommy Orange, an enrolled member of the Cheyenne and Arapaho tribes, fictional stories are shared of contemporary Native characters leading up to a powwow, and during this powwow there is an emphasis on the regalia worn by some characters. This presentation will be about the significance of regalia worn at such powwows and how they are made.

Katherine Eufemia '22, Environmental Science; **Talia Queeney** '22, Environmental Science

Faculty Sponsor: Professor Vanessa Diana

Traditional Native American Environmental Sustainability Practices*

In *The Marrow Thieves* (2017), Cherie Dimaline (Métis) has the character Frenchie face the decision to hunt a moose to feed his tribe but waste half the food, or continue to go hungry; he spares the moose. The practice of self-restraint is one of many traditional Native environmental sustainability techniques this project will discuss.

Christopher Gage '24, Criminal Justice

Faculty Sponsor: Professor Vanessa Diana

Reservations and Incarceration*

In the novel, *There There*, by Cheyenne and Arapaho author Tommy Orange, violence, a stereotype of Native Americans, is characterized by five of the twelve cast members we are introduced to in the book. This project digs deeper into Native American incarceration rates, and analyzes the disproportionate rate at which they are locked up compared to White Americans.

Jean Ganek '23, Biology

Faculty Sponsor: Professor Vanessa Diana

All You Need is Faith, Trust, and Gender Norms: Disney's Subliminal Messages about Gender

Although the explicit messages from Disney films may be positive, the subliminal messages in classic Disney movies have a detrimental effect on how children grow up to view gender.

Mary Glasheen '23, Criminal Justice

Faculty Sponsor: Professor Vanessa Diana

Native Americans and Fetal Alcohol Syndrome*

In the novel, *There There* (2018) by Tommy Orange, an enrolled member of the Cheyenne and Arapaho Tribe of Oklahoma, we are introduced to a variety of Native Americans who suffer from alcoholism and hear the stories of the impact alcohol had on them and their children, including one character who was born with fetal alcohol syndrome (FAS). This project will dive into why Native Americans turn to alcohol and the effects it leaves, not only on the one using the alcohol to cope but on the children as well, with a focus on FAS.

Brianna Goyette '21, Social Work

Faculty Sponsor: Professor Vanessa Diana

Trauma and PTSD in Relation to Native American Children*

In the screenplay *The Moon In Two Windows* (2019) by Kiowa novelist N. Scott Momaday, the children face countless traumatizing hardships such as being removed from their homes and forced into boarding schools. This project will delve into the trauma that many Native American children face today, including looking into generational trauma, the affects that Trauma/PTSD has on a child, as well as some Native and Western treatments that are being used for Trauma/PTSD.

Zachary Graveline '22, Business Management

Faculty Sponsor: Professor Vanessa Diana

Alcohol Abuse and Intergenerational Trauma in Native American Communities*

In the novel *There There* (2018) the author Tommy Orange from the Cheyenne and Arapaho tribe makes various connections and hidden statements regarding alcohol abuse and intergenerational trauma. This presentation will provide insight on the connection to Native American communities as well as rehabilitation services for Native American people.

Rebecca Grome '24, Computer Science

Faculty Sponsor: Professor Vanessa Diana

The History and Significance of Running in Native American Culture*

In the play *The Moon in Two Windows* (2007), by N. Scott Momaday (Kiowa), the Native American students at the Carlisle boarding school, including famous olympian Jim Thorpe (Sac and Fox), are known as great runners in the late 1800s. This presentation will discuss the history of running in Native American tribes, and the different ways running is used in Native American culture, from spreading awareness of the different issues happening in Native American communities to running as a way to connect spiritually.

Timothy Hasenfus '24, Undeclared

Faculty Sponsor: Professor Vanessa Diana

A Deeper Dive into Native American Struggles*

In the novel *There There* (2018), Cheyenne and Arapaho author Tommy Orange includes many characters that are depicted as struggling with substance abuse throughout the story. This project will dive deeper into why Native American communities have such a high percent of substance abuse.

Haley Kane '24, Elementary Education and Psychology

Faculty Sponsor: Professor George Layng

Leadership in Lions Club International

The topic of this research project is leadership in Lions Club International, specifically about how gender impacts leadership. Lions Club International is being studied to further explore the question of how much of an impact do societal expectations and gender norms have on the leadership at this organization.

William Motherway '23, Business Management

Faculty Sponsor: Professor Vanessa Diana

19th Century American-Indian Wars

In the story *The Moon in Two Windows* by N. Scott Momaday (Kiowa), Plenty Horses, a Lakota student attending the Carlisle Indian Industrial School, leaves campus and kills Army Lieutenant Edward W. Casey in response to the Wounded Knee Massacre. This project will focus on historic engagements between Indian Tribes and the soldiers and settlers of the U.S.

Michael O'Shaughnessy '22, Chemistry

Faculty Sponsor: Professor Vanessa Diana

Native Traditions and the Fight Against Climate Change*

The novel *The Marrow Thieves* (2017) by Metis author Cherie Dimaline, takes place in a dystopian future where the inhabitants of our planet are experiencing the catastrophic aftereffects of climate change. This project will delve into different Indigenous traditions pertaining to environmental sustainability and how they could help us to mitigate some of the effects of climate change that we have already started to experience today.

Joseph Palmatier '23, Economics and English

Faculty Sponsor: Professor Vanessa Diana

Missing and Murdered Indigenous Women*

Indigenous Women are murdered at a rate that is 10 times the national average, and more than 4 in 5 of them experience violence in their lifetime. This research will aim to identify the cause of these skewed numbers as well as the most efficient ways to combat the issue.

Caitlyn Pellerin '24, Nursing

Faculty Sponsor: Professor Vanessa Diana

Violence Towards Native American Women*

In the novel *There There* (2018), Cheyenne and Arapaho author Tommy Orange tells the story of twelve Native American characters and their experiences leading up to and during the Oakland powwow, including Blue, who runs away from her abusive husband. This project will explore the violence that Native American women face, focusing on the issue of missing and murdered indigenous women (MMIW) and raising awareness for these underreported crimes.

Hassan-Ali Qureshi '23, Business Management

Faculty Sponsor: Professor Vanessa Diana

Native American Myths, Legends, Dreams, and Omens*

In the young adult novel *The Marrow Thieves* (2017), Métis author Cherie Dimaline takes us through the dystopian lives of Native American youth in a world where dreams are non-existent for all of humanity save for Native people, who hold dreams in their bone marrow and are hunted down for it. This project will investigate some of the spiritual traditions of Native American culture, from animals seen by some tribes as harbingers of bad times to come or heralds of fortune, to myths and legends like the Wendigo, to the importance of dreams, which are key to Native American spiritualism and are the subject of Dimaline's novel.

Anna Sellon '25, Criminal Justice

Faculty Sponsor: Professor Vanessa Diana

Violence Against Native American Women on Reservations*

In the novel *There There* (2018) Cheyenne and Arapaho author Tommy Orange creates a character of Cheyenne descent named Jacquie Red Feather, who faces sexual assault during the Native American occupation of Alcatraz. This project will research the issue of sexual violence against Native American women on reservations, as well as what is being done within the US and tribal justice systems to solve this issue.

Gwyneth Smith '24, Communication

Faculty Sponsor: Professor Vanessa Diana

The Gruesome History Behind Thanksgiving*

In the novel *There There* (2018) Cheyenne and Arapaho author Tommy Orange references the history of Thanksgiving in the prologue of his novel. This project will focus on the Pequot massacre, including what happened the day of the massacre, who was involved, how it became to be Thanksgiving as we know it, and how the holiday is portrayed in history classes in America today.

Andrew Sondrini '23, Social Work

Faculty Sponsor: Professor Vanessa Diana

Native American Perspective on Inappropriate Sports Mascots*

In the play *The Moon in Two Windows* (2007), Kiowa author N. Scott Momaday has scenes revolving around a football game between the Carlisle Indian Industrial School and Army. This presentation will look at the Native American perspective on inappropriate professional sports teams mascots, in particular, the former professional football team known as the Washington Redskins, of the National Football League.

Cody Spencer '24, Social Work

Faculty Sponsor: Professor Vanessa Diana

The Celebration of a Massacre*

In the novel *There There* (2018), Cheyenne and Arapaho author Tommy Orange, opens with talking about the Pequot massacre that happened on our beloved holiday. This project will discuss what truly happened on the first Thanksgiving so long ago, its significance, and education reform.

Carter St. Lawrence '22, Criminal Justice; **Aidan Tierney** '24, Criminal Justice

Faculty Sponsor: Professor Vanessa Diana

A Closer Look at Contemporary Crime in Native American Society*

In Cheyenne and Arapaho author, Tommy Orange's novel, *There There* (2018), a group of Native Americans in Oakland are involved in a number of violent and drug crimes. This research project will look into the current trends involving crime in Native American communities, and criminal investigations on Native American reservations.

Lynn Strattman '23, English

Faculty Sponsor: Professor Vanessa Diana

Suicide in Native Populations*

In the novel *There There* (2018) by Cheyenne and Arapaho Native Tommy Orange, mental and physical health are a central theme as concerns around alcoholism and suicide reveals a problem among Native American families. This project will look into the topic of suicide within Native populations to examine causation, etiology, prognosis as well as aim to address culturally specific solutions.

Grace Templeton '22, English

Faculty Sponsor: Professor Michel Filas

On Motherhood and Mothering: Mourning What I Lost When I Became a Mother*

What is lost when a woman becomes a mother? Using popular culture narratives, personal experience, and extensive interview material, this memoir examines the transition from woman to motherhood through Elisabeth Kubler-Ross's "Five Stages of Grief," aiming to shed light on the ambiguities of motherhood that are often overlooked.

Meghan Tolpin '25, Mathematics

Faculty Sponsor: Professor Vanessa Diana

The Occupation of Alcatraz: A Movement of the Indians of All Tribes*

In the novel, *There There* (2018), Cheyenne and Arapaho author Tommy Orange includes a character named Opal Viola Victoria Bear Shield, who shares her experiences as a young girl on Alcatraz Island during the Native American Occupation of Alcatraz of 1969, which lasted for 19 months. This project will delve into the inspirations, the events that took place, and the long-term effects of this protest.

Ketia Valme '24, English

Faculty Sponsor: Professor Vanessa Diana

Genetic Ancestry Testing: White Discovery of "Indianness"*

My research project focuses on the break out of DNA testing. During which time, a lot of white people discovered as little as a 1% Native American Heritage in their blood. They took that and ran with it.

Olivia Elie '22, Movement Science; Carly Walsh '22, Movement Science

Faculty Sponsor: Professor Vanessa Diana

The Significance of Contemporary Powwows on Native American Communities*

In the novel *There There* (2018), Cheyenne and Arapaho author Tommy Orange picked the Oakland Powwow to be a focal point for a range of Native American characters coming together. This research aims to look at aspects of contemporary Native American Powwows, including dances, music, and regalia, and their significance throughout the Native community.

Jacob White '22, History

Faculty Sponsor: Professor Vanessa Diana

The Native Dream*

In the novel *The Marrow of Thieves*, Métis author Cherie Dimaline centers the plot around a post-apocalyptic society in which all people except Native-Americans have lost the ability to dream. This project will investigate the spiritual and cultural significance of dreams in a variety of tribes across the Americas.

Nicholas Zanchi '23, Criminal Justice

Faculty Sponsor: Professor Vanessa Diana

Jim Thorpe: Athlete, Actor, Indian*

In *The Moon in Two Windows* (2007), a play written by N. Scott Momaday (Kiowa), legendary athlete, Olympian, and actor Jim Thorpe, a Sac and Fox and Potawatomi native, is referenced. This project will highlight the extraordinary and fascinating life of one of the greatest athletes of all time, Jim Thorpe.

Wall of Words Authors

Alexa Arroyo, Waleed Azad, Odette Benes, Ashley Bloem, Tyler Bouchard, Sabrina Bourassa, Sarah Bratt, Jankie Burgos Cruz, Kaitlin Carmichael, Caitlin Chandler, Cassidy Connolly, Josephe Conte, Alexiz Crafts, Scott Doan, Angela Downey, Courtney Foley, Liam Foskett, Brianna Fraser, Emily Frost, Jensen Giroux, Joseph Grady, Melissa Griffin, Samantha Grunden, Samantha Gutierrez, Kailey Houle, Jamar Johnson, Cameron Kelleher, Josph Labadini, Serena Lee, Alora Machuca, Jake Mahoney, Angie Matthew, Breanna Morse, Caitlyn Murphy, Anthony Negron Vargas, Kelly O'Connell, Owen Ortiz, Joseph Palmatier, Shannon Roycroft, Elizabeth Sears, Kayla Shields, Nathan Solitario, Morgan Stapleton, Michael Stevens, Thomas Tinlin, Zachary Tyler, Ketia Valme, Brenda Vazquez, Jahana Watt, Elizabeth White, Maddie White, and Mollie Wilcox.

Geography, Planning, and Sustainability

Morgan Benoit '21, Sports Medicine and Human Performance

Faculty Sponsor: Professor Brian Conz

Climate Change Effects on African Savanna Wildlife Populations

I will be researching how climate change is effecting the wildlife of the African savanna wildlife. Specifically in the increase and decrease of ecosystems pertaining to wildlife like giraffes and the increase and decrease in population due to the above statement.

Michaella Cesarini '23, Elementary Education and Liberal Studies

Faculty Sponsor: Professor Brian Conz

Sustainable Education in K-12 Schools

In the face of mounting evidence of multiple intersecting environmental crises, it is becoming increasingly important to institute sustainability education in K-12 schools. In this research, I present my findings on best classroom design, pedagogical innovation, and environmental initiatives on the individual classroom level.

Kaylea Cornwell '22, Criminal Justice and Psychology

Faculty Sponsor: Professor Brian Conz

Ocean Acidification: Processes, Projections, and Possible Solutions

Through this project, we will explore ocean acidification, what it is and what it means for our future. I will explore the three P's of my project; processes, projections, and possible solutions.

Joshua Dangora '23, Business Management

Faculty Sponsor: Professor Brian Conz

Coral Reef Sustainability

My topic will be about coral reefs and how they are being affected by climate change. Also, I will be talking about how scientists are trying to sustain/build more coral reefs.

Amanda Jefferson '24, Communication

Faculty Sponsor: Professor Brian Conz

Food Waste Reduction, One Person at a Time

To effectively research Urban Farms/gardens, my research objectives are to help educate people on the appreciation of food, by informing them of where food comes from, and how to properly dispose of it. The goal is to look into how this would work in Brooklyn, New York and to see the cumulative effects of this within Brooklyn over time.

Rachel Lagasse '23, Psychology

Faculty Sponsor: Professor Brian Conz

Fast versus Sustainable Fashion

In this research, I will be presenting on fast versus sustainable fashion in terms of quality, cost, and effects on the Earth. I will be delving into some specific brands that are sustainable versus a few that are considered "fast fashion."

Paige Pressey '21, Biology and Environmental Science

Faculty Sponsor: Professor Brian Conz

The Land and Its Caretakers: Indigenous Practices, the Failure of Western Culture, and the LANDBACK Movement

This research project examines how indigenous practices can help the environment in ways that Western culture fails to do. LANDBACK is a major focus of the project and details how its framework has the ability to positively shape modern American society.

Chase Rogers '22, Athletic Training

Faculty Sponsor: Professor Brian Conz

True Impact of Cryptocurrency Mining

There has been a recent boom in cryptocurrency mining in the past five years, there has also been an increase in energy consumption because of this mining. This research will examine solutions to lower the energy consumption and critique the current practices.

Kathleen Ryan '23, Nursing

Faculty Sponsor: Professor Brian Conz

Is Climate Change Causing Zoonotic Spillover?

Climate change effects such as landscape modification, wildfires, and changing ecosystems may be the root cause of zoonosis spillover. These key changes in our planet have increased animal displacement and led to the spread of infectious diseases both in our past and present.

Byanca Silva '24, Environmental Science

Faculty Sponsor: Professor Brian Conz

The Environmental Harm of Books

I will talk about the effects book publication has on the environment. I will also talk about how publishers are going green to reduce their carbon foot print.

Gwyneth Smith '24, Communication

Faculty Sponsor: Professor Brian Conz

Living Sustainably Within a Dorm*

As the negative impacts of climate change rapidly increase and ecosystems deteriorate, we as humans need to make changes to our lifestyles to help preserve and protect our planet. Many of us on Westfield State University's campus do not practice sustainable living and this project will focus on how to live sustainably on a college campus and the positive impacts it can have by making the switch to a greener way of life.

Abbie Steinman '23, Nursing

Faculty Sponsor: Professor Brian Conz

In What Ways do Climate Change and Pollution Affect Human Health?

The various health defects that humans are faced with as a result of climate change and pollution, and the counteractions that can be done to help prevent further complications.

Brianna Toomey '24, Biology and Chemistry

Faculty Sponsor: Professor Brian Conz

Practicing Sustainability in Pharmaceutical Companies

Practices within pharmaceutical companies in both manufacturing and disposal of drugs have led to environmental destruction within aquatic ecosystems, resulting in contaminated water sources and pollution. By introducing more sustainable practices, such as using organic eco-friendly solvents, filtration systems, and reusing resources, pharmaceutical companies can limit their impact and prevent environmental deterioration.

Sarah Tormey '22, Economics and Finance

Faculty Sponsor: Professor Brian Conz

The 2016 Gatlinburg Fire: Causes, Impacts and Forest Succession

In 2016, a major wildfire spread across Gatlinburg, Tennessee causing mass destruction to the surrounding area. In this research, I present my findings on the causes, impacts and forest succession.

Bianca Toure '23, Communication

Faculty Sponsor: Professor Brian Conz

Environmental Racism

I am going to talk about how environmental racism has impacted minorities. I will also talk about modern forms of environmental racism occurring.

History

Nadia Nieves '23, History and Political Science

Faculty Sponsor: Dr. Nicholas Aieta

Non-Violent Protest*

Speeches, boycotts, forcing integration and non-violent acts are all favorable in getting a point across without the need for violence. When violence is added into the equation, the protest is simply shut down or ended in a ruckus.

College of Education, Health, and Human Service

Criminal Justice

Travis Enders '21, Psychology & Criminal Justice

Faculty Sponsor: Professor Daniel Price

Policy Proposal to Address Hate Crime Against Transgender Americans*

I will be presenting on policies that can be put into place to protect Transgender Americans from having hate crimes committed against them.

Economics and Business Management

Isabella Aitken; Gino Alosi; Alex Antuna '22, Business Administration

Faculty Sponsor: Professor Anthony Furnelli

Cryptocurrency in Business

Cryptocurrency has gained popularity and use globally in this past year. Our presentation provides information on cryptocurrency, its growth, and how it has infiltrated many aspects in business.

Aresha Ali '22, Economics and Accounting

Faculty Sponsor: Professor Hillary Sackett-Taylor

Plastic Pollution and Possible Economical Solution*

With the rapid increase in plastic production and lack of recycling, plastic pollution has become one of the most critical environmental issues. Using the Vensim dynamic simulation software, this project investigates the impact of a plastic production tax and the use of this potential revenue for enhancing the recycling industry's overall efficiency.

Joshua Brouillette '22, Marketing; **Zachary Clark '23**, Management; **Matthew Collier '22**, Management & Marketing

Faculty Sponsor: Professor Anthony Furnelli

Sales Careers & the Impact of COVID-19

This presentation discusses a small variety of common sales careers in the U.S. It also applies qualitative and quantitative data to explore how they were impacted by the COVID-19 pandemic.

Thalia Ennis '22, Liberal Studies; **Cameron Hartmann '22**, Business

Faculty Sponsor: Professor Anthony Furnelli

Nonverbal Communication in Sales

This presentation gives an overview on how nonverbal communication can impact and improve one's ability in a sales setting. Being able to understand and utilize nonverbal communication is an important aspect in business, especially sales.

Elisabeth Huijing '23, Marketing; **Joseph Laboranti '22**, Business Management; **Jake Little '22**, Business Management

Faculty Sponsor: Professor Anthony Furnelli

Sell the Benefits: Follow with Features

When selling a product or service it is important to explain what a customer will gain through benefits. Features should then follow, consisting of data, facts, and product characteristics.

Isaiah Lopez '23, Business Marketing; **Jack Moriarty '22**, Business Marketing; **Frankie Novio '22**, Business Management

Faculty Sponsor: Professor Anthony Furnelli

Sales Rejection: A Comparison of Japan and the United States

There are different ways Japan and the United States handle rejection from a cultural perspective. Knowing the difference between the two cultures and overcoming rejection with each is crucial to success in sales.

Mia McDonald '22, Economics and Accounting

Faculty Sponsor: Professor Hillary Sackett-Taylor

The Fair Trade Coffee Industry: Reducing Farmer Income Inequality*

Using Vensim Dynamic Simulation Software, this project investigates the fair trade coffee industry and the benefits that farmers receive from participating. It proposes a policy to increase the wellbeing of the producers and overall sustainability of the industry.

Amy O'Sullivan '22, Economics and Mathematics

Faculty Sponsor: Professor Hillary Sackett-Taylor

Water Scarcity - How to Replenish a Depleting Water Supply in the San Joaquin and San Francisco River Valley*

Two thirds of the U.S. fruit market, one third of the U.S. vegetable market, and over 25 million people are at risk in the San Joaquin and San Francisco River Valley due to decreasing water supply. Using Vensim Dynamics Simulation Software, this project investigates regional water scarcity and looks at potential ways California can take action to help conserve their water supply.

Victoria Paras; Brittany Phillip '21, Business Management; **Casey Rosen** '23, Marketing; **Jeanette Vorobyova**

Faculty Sponsor: Professor Anthony Furnelli

Communication Styles and Sales: Verbal & Non-Verbal

Communication in sales is crucial to being an effective sales person and through the four style method you are able to refine your style. This poster highlights research in each style while also emphasizing both verbal and non-verbal communication.

Brendan Roy '21, Marketing; **Justin Smith** '22, Business; **Kevin Stec** '22, General Studies

Faculty Sponsor: Professor Anthony Furnelli

Overcoming Rejection in Sales

This presentation explains how sales people plan for, get through, and learn from rejection within sales. Each of the methods used are aspects of emotional intelligence, which is a key to success within sales.

Sarah Tormey '22, Economics and Finance

Faculty Sponsor: Professor Hillary Sackett-Taylor

Food Waste in the United States: Do Household Labels Help Address the Issue of Food Waste? *

On average, 43% of food is wasted by households in the United States. Using Vensim Dynamic Simulation Software, this project investigates the impact of a food labeling policy on the potential for decreasing food waste.

Sports Medicine and Human Performance

Molly Babin '22, Movement Science

Faculty Sponsor: Professor Lynn Pantuosco-Hensch

How Does Gut Microbiota Affect the Physical Performance in Athletes?

Gut microbiota is very important in playing a role in a persons overall physical health, based on the diversity of the microbes in the gut, determines how healthy that person is. Research is starting to be done and showing that a healthier and more diverse gut microbiome can improve the performance in athletes.

Alberto Burgos Jr '22, Movement Science, Sports Medicine Concentration

Faculty Sponsor: Professor Lynn Pantuosco-Hensch

How are Individuals that Suffer from Exercise Induced Asthma Impacted by the Environments They Participate In? *

The study conducted inspects the effects of different environments on individuals with exercise induced asthma participating in their respective sports. Identifying risk factors, methods of prevention, and methods of treatment in order for these individuals to fully participate in their sport.

Sarah Calnan '22, Movement Science

Faculty Sponsor: Professor Lynn Pantuosco-Hensch

The Importance of Screening for Developmental Delays and the Effectiveness of Early Intervention for Infant-Toddlers Under the Age of Three Years

12 to 16 percent of children in the United States have at least one developmental delay, yet as many as one-half of affected children will not be identified by the time they enter kindergarten. It is extremely important to notice the signs of developmental delay, so they can be caught early and treated to prevent more delay as the child continues to grow. Through peer reviewed articles, and systematic reviews, I will present the important use of screening for developmental delays and early intervention effectiveness.

Caitlin Cogan '22, Movement Science

Faculty Sponsor: Professor Lynn Pantuosco-Hensch

Benefits of Blood Flow Restriction After Knee Surgery*

Blood flow restriction (BFR) enhances the healing process by occluding venous blood flow and allowing arterial blood flow to pass throughout the body to increase muscular hypertrophy while doing low-intensity exercises. The focus of this research project is to determine whether individuals who have had knee surgery benefit from BFR by building stronger muscles which speeds up the recovery process.

Danielle Collins '22, Movement Science, Sports Medicine Concentration and Psychology

Faculty Sponsor: Professor Lynn Pantuosco-Hensch

Different Occupational Therapy Interventions and Their Effects on Mental Health Symptoms*

Although occupational therapy found its origins in psychiatric settings, the practice has strayed from the original focus on mental health benefits but has had a more recent renewal of interest. The present research aims to identify multiple occupational therapy interventions and related effectiveness on mental health symptoms.

Grace Dufromont '22, Movement Science, Sports Medicine Concentration and Psychology

Faculty Sponsor: Professor Lynn Pantuosco-Hensch

Comparison of Prone and Supine CPR*

Comparing which positions of CPR benefit patients who are in cardiac arrest. This may provide another way for first responders to save another life.

Olivia Elie '22, Movement Science

Faculty Sponsor: Professor Brian Selgrade

Adaptations of Ground Reaction Forces in Abrupt vs Gradual Split-belt Treadmill Walking

The purpose of this research is to compare motor adaptation in ground reaction forces during sudden and gradual onset split-belt treadmill walking in healthy adults. We hypothesized that in both sudden and gradual onset adaptation, propulsive and braking forces would show aftereffects, indicating predictive control of leg force during walking adaptation.

Olivia Elie '22, Movement Science

Faculty Sponsor: Professor Lynn Pantuosco-Hensch

How Do Injuries in Collegiate Athletes Negatively Affect Their Mental Health?

This research examines the effects of injuries on the mental health of collegiate athletes in all levels of competition. Mental health related illnesses such as anxiety, depression and eating disorders are prevalent in collegiate athletes and can overall negatively affect their quality of life, making this topic of exploration important.

Meaghan Kirley '22, Movement Science

Faculty Sponsor: Professor Lynn Pantuosco-Hensch

Effect of Physical Activity on Management of Cystic Fibrosis

This research evaluates the effect of aerobic exercise and muscle strength training on the maintenance and reduction of symptoms in Cystic Fibrosis patients. Difference in overall quality of life after training programs were implemented was a primary focus of this research.

Haley Lohnes '22, Movement Science, Sports Medicine Concentration and Psychology

Faculty Sponsor: Professor Lynn Pantuosco-Hensch

The Effects of Exercise in Patients with Multiple Sclerosis

Patients with Multiple Sclerosis can have large issues with fatigue, effecting their quality of life. The purpose of this research is to ind out if exercise in patients with Multiple Sclerosis can help to improve their symptoms and quality of life.

Alexis Mason '22, Movement Science

Faculty Sponsor: Professor Lynn Pantuosco-Hensch

The Effects of Exercise on Cancer Patients

The cancer treatments that are supposed to kill cancer cells come with toxic side effects. The research provided shares exercise guidelines for patients and the effects it can have on the body.

Jenn Rennich '22, Movement Science, Sports Medicine Concentration

Faculty Sponsor: Professor Lynn Pantuosco-Hensch

Sports Specialization: The Mental and Physical Effects of Early Specialization

An exploration of the mental and physical effects of early sports specialization, including the average age of specialization, burnout rates, and maladaptive outcomes. Research shows that late specialization and sport sampling produce more positive psychosocial outcomes and reduced injury risk when compared to early specializers.

Madison Santos '22, Movement Science

Faculty Sponsor: Professor Lynn Pantuosco-Hensch

How Television Affects the Cognitive, Social, and Fine Motor Development in Kindergarten-Aged Children*

As the inevitable change in technology grows in the world, children are gaining more ways to learn and play at a very young age. Since most ways are more effective than others in helping children gain important developmental skills, it's critical that we're aware of the differences in children using technology as opposed to more traditional ways of play so we can implement these differences and raise more successful children.

Garrett Sicard '22, Movement Science

Faculty Sponsor: Professor Lynn Pantuosco-Hensch

Injury Prevention Programs and Their Effectiveness in Youth Sports

Youth sports require athletes to practice and train their sport-specific skills, but minimal programs focus on injury prevention. Injury prevention focused training programs provide youth athletes with the proper skills and techniques to excel with significantly lower risk of developing sport injuries.

Victor Simbana '22, Movement Science

Faculty Sponsor: Professor Lynn Pantuosco-Hensch

Understanding the Prevalence and Signs of Overtraining in Youth Athletes*

My research is based on the psychological and physiological effects of Overtraining and Overreaching syndrome in young athletes.

Carly Smith '22, Movement Science

Faculty Sponsor: Professor Lynn Pantuosco-Hensch

Effects Music Therapy Has on Dementia

Dementia is a common disease that effects three million people each year. I will be presenting how music therapy can effect the severity of symptoms that dementia patients face.

Anna Stewart '22, Movement Science, Sports Medicine Concentration

Faculty Sponsor: Professor Lynn Pantuosco-Hensch

The Effect of Mesenchymal Stem Cell Therapy on Osteoarthritis*

A determined cure to Osteoarthritis is yet to be discovered, but Mesenchymal Stem Cell Therapy is being used to aide patients. Findings on how Mesenchymal Stem Cell Therapy are advancing the future in curing osteoarthritis will be provided.

Tristan Szawlowski '22, Movement Science, Sports Medicine Concentration

Faculty Sponsor: Professor Lynn Pantuosco-Hensch

Electromagnetic Radiation: What We All Should Know About How Technology Can Negatively Affect Our Physical and Mental Health*

I will describe how electromagnetic radiation is mainly from cellphones and wifi. I will make recommendations for safer use of wireless devices.

Julia Vigneault '22, Movement Science

Faculty Sponsor: Professor Lynn Pantuosco-Hensch

The Effects of Added Sugars on Athletic Performance

In the constantly changing world of nutrition, athletes have experimented with hundreds of diets over the years. Research emphasizes the importance of carbohydrates in diets designed for athletic performance, but questions arise about the effects of added sugars on athletic skill.

Carly Walsh '22, Movement Science

Faculty Sponsor: Professor Lynn Pantuosco-Hensch

Beneficial Effects of Aquatic Therapy for Cerebral Palsy Children and Adolescents

This research poster examines whether gross motor function, quality of life, and respiratory systems are enhanced after participating in aquatic therapy rehabilitation programs among children and adolescents diagnosed with Cerebral Palsy. Research reveals aquatic therapy is beneficial due to the buoyancy of the water, antigravity positions, weight reduction, relaxing environment, and decreased compressive forces on joints, making it easier and more comfortable for Cerebral Palsy patients to move through stretches and exercises.

Jordan Wiggins '22, Movement Science, Sports Medicine Concentration

Faculty Sponsor: Professor Lynn Pantuosco-Hensch

Effects of Repetitive Head Trauma and/or Concussions in Athletes Who Play Contact Sports

Concussions are a prevalent risk when it comes to playing sports, particularly contact sports such as football, hockey, boxing, and soccer. Millions of athletes of all ages may face the risks of concussion and repetitive head trauma.

College of Mathematics and Sciences

Biology

Jordan Adadevoh '22, Biology; Kelly Gearin '22, Biology; Elijah Mosley '22, Biology
Faculty Sponsor: Professor Mao-Lun Weng

How is Modern Medicine Currently Combating the Adaptations Made by Glioblastoma? *

Our presentation has a brief introduction about modern medicine adapting with current glioblastoma disease. Following compared sequence data of healthy individuals and sick individuals with glioblastoma.

Maram Alkhazraji '22, Biology; Akhmet Azizov '22, Biology
Faculty Sponsor: Professor Mao-Lun Weng

Investigation of Differential Expressed Genes in Patients Diagnosed with Schizophrenia*

This study went into detail about gene expression in homo sapiens diagnosed with Schizophrenia and healthy homo sapiens. Data was interpreted from the NCBI database and analyzed using Cyverse and R-Studio.

Haley Brault '22, Biology; Katherine Comer '22, Biology and Health Sciences; Jenna Gay '22, Biology; Fallyn Roberts '22, Biology and Health Sciences; Emma Strode '22, Biology; Kyle Sullivan '22, Biology; Alice Teele '22, Biology; Matt Wandishion '22, Biology
Faculty Sponsor: Professor Ruth Darling

Squirrel and Chipmunk Foraging Preferences

This is an eight person field study on squirrels and chipmunks' foraging behaviors. We will be presenting about our methodology, results of the study, and the implications of the study.

Amani Chehimi '23, Biology; Jessica Dickinson '22, Biology; Megan Hunt '21, Biology
Faculty Sponsor: Professor Mao-Lun Weng

Comparison of Differentially Expressed Genes in Alzheimer's Patients and Mouse Models Using RNA-seq Data*

Comparing the brain features of a healthy versus a diseased individual we will be able to analyze changes happening in the brain and ways we can target specific areas for better treatment, research, and a better understanding of how AD affects the overall brain. Detection of known and hidden features will be looked over when comparing the healthy versus diseased patients with the use of RNA-seq to compare different genomes between the two. The comparison of a healthy mouse, and one with similar structures to Alzheimer's will also be analyzed to observe similarities for the option to use them for research studies for treatment methods. Different SRA 's were found from different articles referenced below in order to run them through the cyverse program, that is a web used to share, analyse, interpret and visualize various data.

Samantha Falcone '22, Biology

Faculty Sponsor: Professor Jason Ramsay

Functional Morphology of the Feeding Apparatus in Chain Pickerel, *Esox niger*: Adaptations for Manipulation and Consumption of Large Live Prey*

This research examines the features of the oral jaws in chain pickerel that allows them to perform their unique and paradoxical method of processing large, live prey. An emphasis is placed on describing musculoskeletal morphology, and quantification of muscle architecture in the adductor mandible complex, which is responsible for jaw closure.

Jean Ganek '23, Biology

Faculty Sponsor: Professor Arne Christensen

The History of Sea Monsters: Tales of Misinformation and the Truth Behind Them*

Through the use of technology, scientists were slowly able to identify the real marine organisms that inspired century old tales of sea monsters. Although sailors spreading misinformation about sea monsters is no longer a concern, the rampant spread of misinformation on social media today may be scarier than the Kraken.

Jacob Guzman '22, Biology; Brianna StMarie '21, Biology; Maha Yahya '22, Biology

Faculty Sponsor: Professor Mao-Lun Weng

The Similarities and Differences in Gene Expression Between Alzheimer's and Huntington's Disease Patients*

Using RNA-seq for Alzheimer's patients and Huntington's patients, we will describe the similarities and differences in the observed gene expressions. We will also compare these observed analyses with that of healthy individuals.

Connor Lemke '23, Biology; Daniel Pellegrino '22, Biology; Brandon Sullivan '21, Biology

Faculty Sponsor: Professor Kristen Porter

Isolation and Development of DNY-mAB Biologic to Treat Rabies Lyssavirus with the Use of cGXP.

We manufactured a mock monoclonal antibody, DNY-mAB, to treat the rabies virus. We emphasize the most strategic way to undergo the manufacturing process using GxPs, critical to the biologic industry and the production of our antibody to ensure purity, quality, and identity.

Marilyn Maison '22, Health Sciences

Faculty Sponsor: Professor Kimberly Berman

The Comparison of Biochemical and Molecular Methods to Identify Unknown Skin Microbes

In this research study, an unknown skin isolate was collected and grown in pure culture. Biochemical tests such as gram staining, testing selective and differential media, Kirby-Bauer Disk diffusion, test and molecular tests such as Polymerase Chain Reaction (PCR) are used to help classify the microbe living on the skin.

Shanna Mecherekov '23, Health Sciences

Faculty Sponsor: Professor Kimberly Berman

Biochemical and Molecular Methods of Identification

A skin isolate was cultured and characterized by biochemical and molecular methods.

Lauren Parziale '23, Health Sciences

Faculty Sponsor: Professor Kimberly Berman

Biochemical vs. Molecular Identification of Unknown Skin and Soil Microbes

In this study, both biochemical and molecular methods are used to identify unknown microorganisms from a skin and soil sample. Each method yields their own advantages and disadvantages.

Kylxia Rosa Grullon '23, Biology

Faculty Sponsor: Professor Kimberly Berman

Biochemical and Molecular Tests on Unknown Environmental and Skin Isolate Bacteria

Identifying an unknown skin bacterial isolate using biochemical tests and bacteriological tests and, in the end, confirming its identification through PCR testing.

Mitchell Sadowski '22, Biology

Faculty Sponsor: Professor Kathryn Weglarz

A Low-cost Camera Trap to Increase Participation and Accessibility in Field Ecology

Field ecology research often involves spending hours outside observing animals and organismal interaction, which can be a barrier to participation in field research. A 'Raspberry Pi' computer can be retrofitted with cameras and other sensors for under \$50, serving as a low-cost camera trap that enables anyone with time, financial, physical, or other restraints to participate in field ecology exercises.

Branice Shigoli '22, Biology

Faculty Sponsor: Professor Kathryn Weglarz

Geographic Effects of Radiation on Metrics of Maternal Health

Exposure to high amount of radiation can cause harmful health effects to humans , and to a developing fetus this may cause malformation, childhood cancer, slower growth, miscarriage and many more negative maternal health effects. Here we investigate correlations between maternal health and radiation using existing datasets.

Matt Wandishion '22, Biology

Faculty Sponsor: Professor Mao-Lun Weng

Analyzing Gut Microbiome Composition in Canines Afflicted with Acute Moist Dermatitis*

Identified and analyzed the bacterial gut microbiome composition in Golden Retrievers afflicted with hot spots to healthy dogs. Used nanopore sequencing and bioinformatics software to look at the relationship of bacterial composition to the skin condition.

Environmental Science

Sean Alioto '22, Environmental science; **Madelyn Chartier** '21, Environmental Science; **Spencer TeWinkle** '22, Environmental Science

Faculty Sponsor: Professor Lauren DiCarlo

Restoration of Frog Habitat in Stanley Park, Westfield, MA

Amphibians are becoming increasingly threatened across the globe and locally as their habitat is degraded and destroyed. Our group devised a master plan to improve the habitat of native frog species in the frog pond located in Stanley Park, Westfield, MA.

Dave Allen '22; **Conner Polymeros** '22, Environmental Science; **Mike Parrish** '22

Faculty Sponsor: Professor Lauren DiCarlo

Riverbank Restoration Project at Whitney Park Recreation Area

Due to its frequent use for its river access by local residents, we are creating a master plan to remove invasive plant species, increase strength in the riverbank, and increase the usage of this area of the park overall.

Lauren Carpenter '22, Environmental Science and Regional Planning; **Margaret Leahy** '23, Environmental Science and Regional Planning; **Andrew Tibbetts** '22, Environmental Science

Faculty Sponsor: Professor Michael Vorwerk

A Comparative Analysis of Median Household Income and Access to Outdoor Public Recreational Spaces in Western Massachusetts

Our research utilizes existing data and ArcGIS to find a correlation between median household income and access to free outdoor recreational greenspaces in Berkshire, Hampden, Hampshire, and Franklin counties. We hypothesize that there will be a positive correlation between income and access to outdoor recreation.

Madelyn Chartier '21, Environmental Science

Faculty Sponsor: Professor Michael Vorwerk

Effect of Development on Fecal Bacteria Content of Pequot Pond

The goal of this study is to determine the impact of developed, forested, and open water areas on the fecal bacteria content of Pequot Pond in Westfield, MA. I collected individual and pooled samples from each type of site to test them for fecal coliform and E. coli using a Colilert, and determined the effect of fall turnover on the bacteria levels over time using a Hydrolab.

Jack Duncan '22, Environmental Science and Community Planning; **Casey Noyes** '22, Environmental Science; **Caitlin Rachmaciej** '22, Environmental Science and Community Planning

Faculty Sponsor: Professor Michael Vorwerk

An Analysis of Asian Jumping Worms, Ticks, and How Microclimate Contributes to Their Success in Invasive and Non-invasive Ecosystems

In this study, we will be measuring the climatic conditions in managed and unmanaged invasive plant thickets and comparing that to an unimpacted control plot in the Westfield State Experimental Forest. Ticks and Asian jumping worms will be counted in each plot weekly to determine correlation and trends between their presence and ecosystem microclimate.

Katie Eufemia '22, Environmental Science; **Lindsay McNulty** '22, Environmental Science; **Shianne Taylor** '22, Environmental Science; **Haley Wales** '22, Environmental Science

Faculty Sponsor: Professor Michael Vorwerk

Impacts of Eastern Gray Squirrel Color Morphology, Speed Limit, and Development on Road Mortality

In this study, we examined the correlation between eastern gray squirrel color morphology and road mortality within Westfield MA. We determined the relationship between speed limits, land development, and where the roadkill occurred.

Kendra Gleeson '22, Environmental Science

Faculty Sponsor: Professor Michael Vorwerk

The Distribution of White Pine Needle Disease and Its Correlation to Tree Size at Westfield State University

For this project, I am surveying Eastern White Pine trees at Westfield State University to determine the abundance and distribution of White Pine Needle Disease. I also explore the relationship between the diameter of trees and the severity of infection.

Michael Heins '24, Environmental Science; **Abby Mahoney** '24, Environmental Science and Regional Planning; **Amber Stearns** '22, Environmental Science and Geography, Planning, & Sustainability

Faculty Sponsor: Professor Lauren DiCarlo

Monarch Butterfly Habitat Restoration of Dower Lot

This is a master plan for a hypothetical habitat restoration project to help increase the monarch butterfly population of Westfield State University campus. This will be accomplished by adding plant species, like milkweed, that will attract monarchs to the area.

Theodore Lovell '22, Environmental Science; **Cecil Talbot** '22, Environmental Science

Faculty Sponsor: Professor Michael Vorwerk

The Impact of Effluent Water and Its Effects on Downstream Water Quality in the Westfield River

For this study, we tested water quality upstream and downstream of the Huntington and Westfield wastewater treatment plants to determine their impacts on the Westfield River. Variables tested include Temperature, Dissolved Oxygen, pH, Specific Conductivity, Nitrogen, and Phosphorus.

Megan McPhail '22, Environmental Science

Faculty Sponsor: Professor Michael Vorwerk

The Impact of Beech Bark Disease on Sunlight, Temperature, and Organic Matter of Forest Soils

The goal of this study is to determine if beech bark disease can indirectly result in a negative or positive influence on forest soils, using HOBO data loggers and evaluating soils for organic material. I explore whether a diminished canopy cover, due to beech bark disease, introduces more sunlight exposure and potentially leads to variations in temperature and organic material in soils surrounding healthy and infected American beech trees.

Kevin O'Grady '22, Environmental Science

Faculty Sponsor: Professor Michael Vorwerk

Climate Conflict: Correlation Analysis between Global Instability and the Worsening Climatic Conditions as a Result of Climate Change

The purpose of this research project is to determine whether or not there is a correlation between the worsening effects of climate change and deteriorating civil instability that accompanies said effects across 70 countries. It is hypothesized that there is a correlation between the two, in that as climate change worsens, there will be ever escalating conflict over resources such as food, water, or habitable air and land.

Talia Queeney '22, Environmental Science

Faculty Sponsor: Professor Michael Vorwerk

Creation of a Milkweed Research Garden to Assess Best Management Practices for Fostering Monarch Butterfly Survival

The goal of this project is to determine which stratification method for milkweed seeds has the highest germination and growth rate. A second goal is to provide additional needed habitat for the threatened monarch butterfly.

Talia Queeney '22, Environmental Science; **Shianne Taylor '22**, Environmental Science;

Krysten Woods '22, Environmental Science

Faculty Sponsor: Professor Lauren DiCarlo

Restoring Grassland Habitat at the Southwick Quarry

Grassland habitats are a rarity in Massachusetts but provide an essential ecosystem for rare grassland dependent species. We are creating a Master Plan to restore the heavily degraded Southwick quarry into a productive grassland habitat promoting wildlife communities, pollinators, and recreational use.

Lily Smith '22, Environmental Science; **Haley Wales '22**, Environmental Science; **Grace**

Zoller '22, Environmental Science

Faculty Sponsor: Professor Lauren DiCarlo

Pollinator Species Diversity & Habitat Restoration in Degraded Grassland on WSU Campus

Pollinator species & habitats are declining w/their ecosystem services declining with them. Our restoration plan aims to restore pollinator species & habitat on the WSU campus.

Amber Stearns '22, Environmental Science and Regional Planning

Faculty Sponsor: Professor Lauren DiCarlo

Floodplain Ecosystem Response to the Removal of *Euonymus Alatus* (Winged Burning Bush) in Western Massachusetts, USA*

This research project explores the way an invasive plant species interacts with and affects a floodplain ecosystem. Winged burning bush is an invasive plant from East Asia that can overtake the understory of a forest, but little is known about its effects on the forest, so we set out to find out more about it.

Toni Uliana '22, Environmental Science

Faculty Sponsor: Professor Michael Vorwerk

Analysis and Prioritization of Dam Removal on Chicopee Brook, Monson, MA for the Benefit of Eastern Brook Trout

In this research, I utilized GIS databases to identify coldwater streams and prioritize small dam removal in the Chicopee Brook watershed to enhance wild eastern brook trout populations by restoring stream connectivity, continuity, and biodiversity. I sampled the macroinvertebrate community, water quality, and assessed habitat suitability at locations upstream and downstream of the former Zero Manufacturing Company dam.

Psychology

Alexa Arroyo '23, Psychology; **Riley Bourgoin '23**, Psychology; **Paul Hart '22**, Criminal Justice and Psychology

Faculty Sponsor: Professor T. Alex Daniel

Do Auditory Distractions Hinder Problem Solving Ability?

We are researching how auditory distractions influence our ability to problem solve and multitask. We are using a survey that includes obscure music while participants answer math questions.

Jenna Barros '23, Psychology; **Nathan Burns '22**, Psychology; **Meghan Powers '22**, Psychology

Faculty Sponsor: Professor T. Alex Daniel

The Context of Color in Memory

Comparison of measurement of accuracy and ability in memory recall of one of two conditions. Recall of events in color video and recall of events in black and white video

Hannah Buxton '23, Psychology; **Paityn Dunn '22**, Psychology; **Mackenzie Hodgdon '23**, Psychology

Faculty Sponsor: Professor T. Alex Daniel

Exercise; Can It Make You Happy? *

We tested if people's happiness is affected by different workout types. By using two different types of 10 minute workouts, we measured the affects of people's emotions using the BMIS scale.

Dominique Garnes '23, Psychology; Shania Hernandez '23, Psychology; Alexis Parkins '23, Psychology

Faculty Sponsor: Professor T. Alex Daniel

Does Food Effect Short-Term Memory?

The purpose of this study is to determine causation of food on short-term memory. We tested participants using a visual short-term memory test once before they ate and again after.

Connor Mazzrillo '23, Psychology; Jasmin Santa '22, Psychology; Mya Zamboni '22, Psychology

Faculty Sponsor: Professor T. Alex Daniel

Eat Your Heart Out: Effects of Food Choice on Emotions

The goal of this study is to test how an individuals snack/meal choice impacts their emotions throughout the day. We plan to assign each participant a random snack (healthy or unhealthy) and they will be instructed to take our survey before consuming the snack, as well as after to determine if the snack choice has any impact on how they feel throughout the day.