



RESEARCH
& CREATIVE
ACHIEVEMENT
C O N F E R E N C E

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.....
THURSDAY, MAY 1, 2025



MERRIMACK COLLEGE



I want to welcome you to explore this year's

MERRIMACK COLLEGE RESEARCH & CREATIVE ACHIEVEMENT CONFERENCE

The Research and Creative Achievement conference is a celebration of student research and creative endeavors. Drawing upon our Augustinian roots of seeking truth through inquiry and dialogue, this annual conference provides an opportunity for both graduate and undergraduate students to showcase their efforts in expanding knowledge within and across academic disciplines.

Successful academic research requires curiosity, creativity and a willingness to go where the evidence leads. These projects exemplify such efforts. These projects are the fruits of sustained and meaningful collaboration with faculty and fellow students and are often the capstone of a baccalaureate or master's degree program. Many of these projects are informed by and through community partnerships that serve to enrich the scholarship, research and creative activity of our students and faculty. These partnerships are critical to strengthening our institutional mission of fostering civic responsibility, addressing societal issues and contributing to the public good.

We are excited to celebrate our student researchers, faculty collaborators and mentors who have shown resilience in a complicated and challenging time, as it serves as a testament to perseverance, resourcefulness and creativity. Their efforts highlight the importance and value of meaningful inquiry. On behalf of Merrimack College, I applaud the excellent student and faculty scholarship represented here and take great pride in their accomplishments.

- John "Sean" Condon, Ph.D.
Provost & Senior Vice President for Academic Affairs

SCHEDULE OF EVENTS

Thursday, May 1, 2025

VISUAL & PERFORMING ARTS STUDENT EXHIBITION

**Rogers Center for the Performing
Arts & McCoy Gallery**

12-1:30 P.M.

Senior Capstone Projects take place in the senior year of study. They are designed to explore a passion with intensity, take the shape of a large experiential project, or complete a research topic written thesis. Projects are designed to challenge your comfort zone. They are publicly celebrated through performance, exhibition, publication and oral presentation.

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STUDENT RESEARCH & CREATIVE WORK

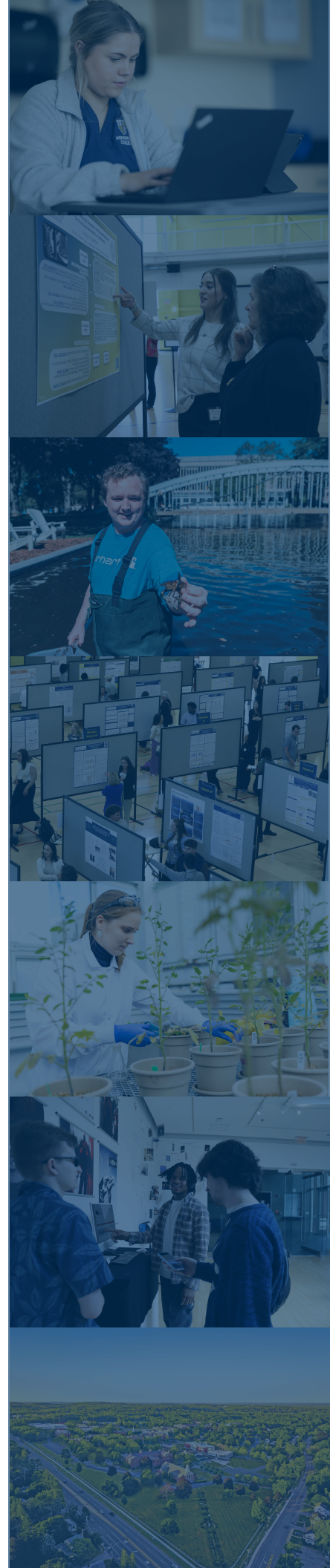
**Multi Purpose Room,
Sakowich Center**

3:30-5 P.M.

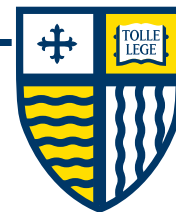
The Research and Creative Achievement Conference features and highlights original creative and innovative work by students, faculty and staff. Composed of exemplary work by both graduate and undergraduate students, the conference enables the Merrimack College community to benefit and learn from the scholarship of one another. Attendees have the option to present their work through posters, multimedia presentations and more.



Note: This program is subject to change.



12 P.M.



VISUAL & PERFORMING ARTS ANNUAL STUDENT EXHIBITION

Rogers Center for the Performing Arts & McCoy Gallery

GRAPHIC DESIGN

Angelina Botros
TARGETED: a novel

Rose Goyette
Interior Design Branding

Taylor Landurand
Odyssey Escape

GRAPHIC DESIGN / ART & ART HISTORY

Carly Taylor
Exploring Plant Endangerment

GRAPHIC DESIGN / THEATRE ARTS

Ariana White
Brave Bird

MUSIC / ART & ART HISTORY

Dawnisha Chavez
Art & Music Primary Education

ART & ART HISTORY / ENGLISH

Liza Santerre
What Happened to Dyndryfan Castle?

MUSIC / BUSINESS MARKETING & MANAGEMENT

Nathan DeBruyckere
History of the Guitar: Antiquity to the Future

MUSIC

Stephen Jovellas
From 12 to 3

Ajahn Rue
Better Late Than Never

MUSIC / COMMUNICATION AND MEDIA

Cassandra DeLegge
Swing Into Music: A Brand Identity

MUSIC / THEATRE ARTS

Audrey McGill
Between Shadows & Light



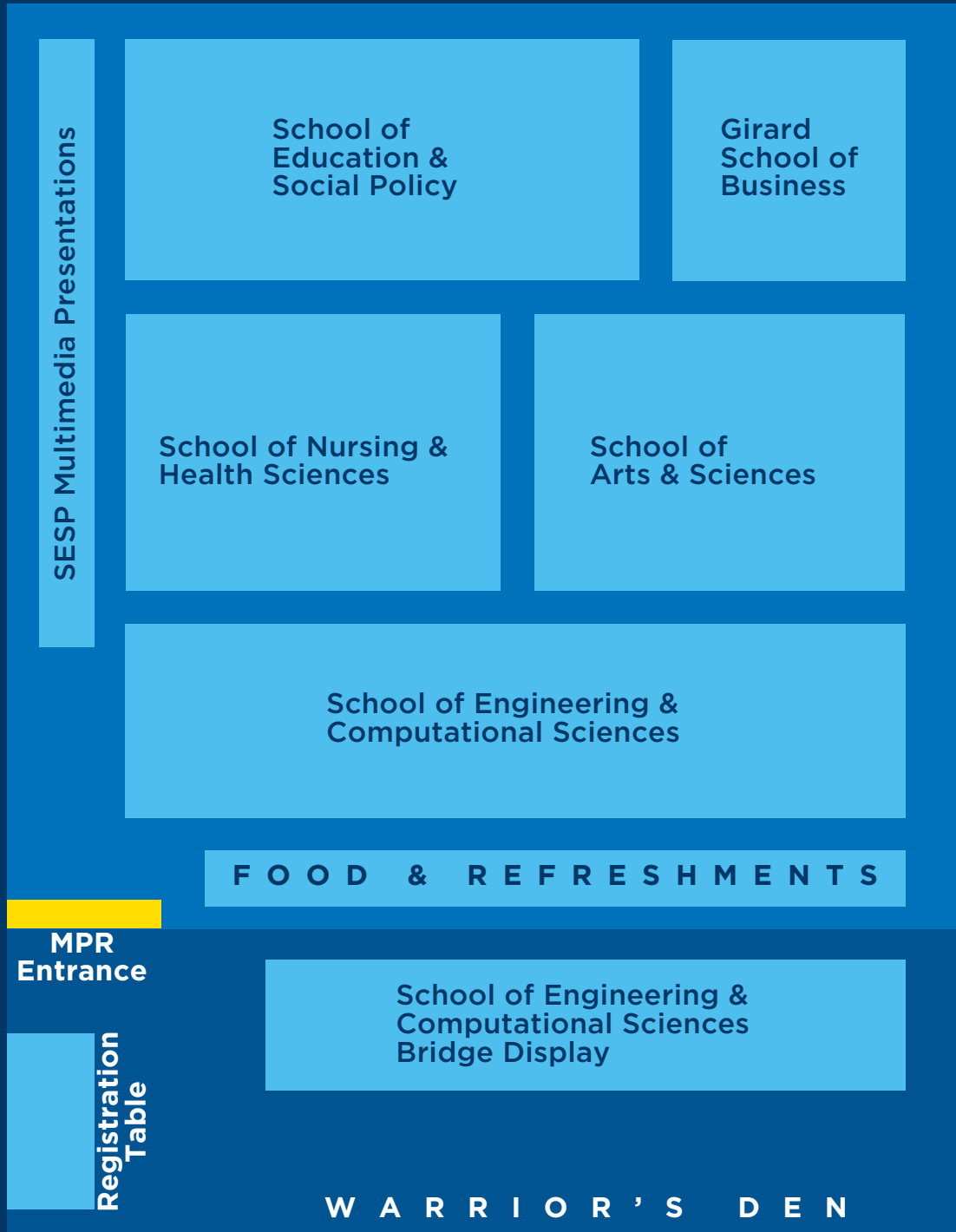
To learn more
about the projects,
visit the [VPA
Students Capstone
Website.](#)

POSTER SESSION MAP

Multi Purpose Room, Sakowich Center

The Poster Session layout is organized by School. Within each School, posters are assigned a number which can be found next to presenters' names in this program. Guests may find posters by number using the wayfinding signs in the Multi Purpose Room.

MULTI PURPOSE ROOM



3:30 P.M.



UNDERGRADUATE & GRADUATE STUDENT RESEARCH POSTERS: GIRARD SCHOOL OF BUSINESS

UNDERGRADUATE STUDENTS

Kaylie Sheffield

Managing a Fixed Income Portfolio &
Implementing Fundamental Credit
Research
GSB-001

**Emma Gannon, Alicia Towne, Mia
Dondero, Angelina Minasian**

Marketing Strategy: John Chalino,
RE/MAX Realty
GSB-002

**Caroline Applin, Bella Crowley, Katie Ma,
Madison Previte, Bridget Callahan**
Consignment Bridal & Prom
GSB-003

Riley Jooss

Ralph Lauren: Strategic & Industry
Analysis
GSB-004

Ella Cormier

Strategic Analysis of Target
GSB-005

Steven Petrillo, Ian Montero

Consumer Behavior using iMotions
GSB-006

**Jack Bondhus, Brendan Zollo, Joe
Ciccarelli**

Merrimack Investment Funds
GSB-007

Mary Rose Anjim

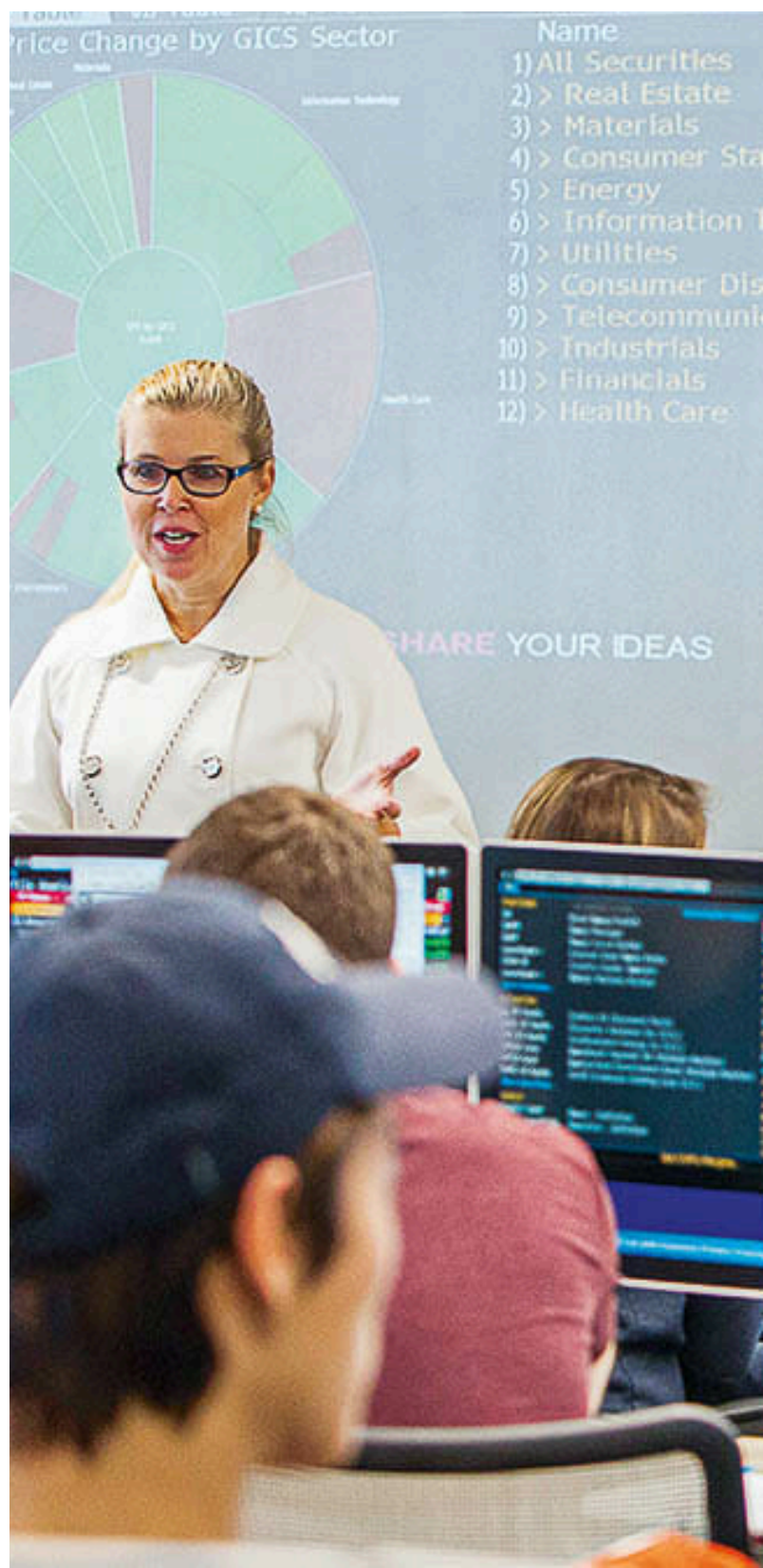
Strategic Analysis & Decision Making:
Ross and TJX
GSB-008

Aja Alimonti

Strategic Analysis of Lululemon Athletica
Inc.
GSB-009

Charlotte Cute

H&M: A Strategic Analysis
GSB-010



3:30 P.M.



UNDERGRADUATE & GRADUATE STUDENT RESEARCH POSTERS: SCHOOL OF EDUCATION & SOCIAL POLICY

UNDERGRADUATE STUDENTS

Stella Benedetto, Elle Carter, Norah Foley, Emma Furtado, Brianna Hood, Grace Magazzu, Mandie Sweeney
Live For Liv Foundation
SESP-016

Sarah Jane O'Connor, Brad Parad, Emma Kelly, Lindsay Kassatly, Megan Jacques, Nicole Morel
Brightview Senior Living
Intergenerational Connections
SESP-017

Ava Dello Russo, Ashley Doo, Spencer Hewett, Cori Mackay, Cailin McNeil, Colleen Powell
On The Right Path: Exploring Rare Road's Vision and Mission
SESP-018

Suzanna Cox, Jake Fitzgerald, Diana Karaj, Kristina Russo, Jacob Symmes
Save Our Streets
SESP-019

Madison Bowers, Bailey Fleming, Molly Henderson, Hannah Makarski, Erin Ocallaghan, Ella Tanso, Kyleigh Walker
The Rainbow Fund
SESP-020

Annie Lagunilla, Aislin Hynes, Jillian Erba, Maegan Taylor, Stephanie Julien, Sarah Pestana
Rare Road Foundation
SESP-021

Anya Cootey
Autism Spectrum Disorder and Mainstream Education
SESP-022

Caroline Steele
My Experience Interning at the Lawrence Court Service Center
SESP-052

Hayley Chang
A Solitary Alternative: Structured Intervention Units in Canadian Prisons
SESP-053



3:30 P.M.



UNDERGRADUATE & GRADUATE STUDENT RESEARCH POSTERS: SCHOOL OF EDUCATION & SOCIAL POLICY

GRADUATE STUDENTS

Laurel Barbosa

Navigating New Beginnings: Closing the Gap in Freshman Year Support
Presented at Massachusetts School Counseling Association (MASCA) Conference
SESP-001

Hailey Tatterfield

Perception of School Counseling Services: English Learner Students' Utilization & Awareness
SESP-002

Anna Mullen

Assessing Teachers' Perceptions of & Levels of Engagement with the Open Parachute SEL Curriculum
SESP-003

Ashley Rapoza

A Comparative Analysis of the DESSA-SSESE Screener & Traditional Referral System for SEL Needs
SESP-004

Michael Belanger

The Impact of an 8-Week Counselor-Led Series of Workshops on Elementary Grade Students' Self-Esteem & Self-Efficacy
SESP-005

Mackenzie O'Neill

The Implementation of an Executive Functioning Curriculum in Middle School Students Diagnosed with ADHD
SESP-006

Kacie Bourrell

Teachers' Perspectives on Restorative Circles
SESP-007

Anna Davies

Evaluating Engagement Strategies for Dispersed College Scholars
SESP-008

Amanda Snow

Rethinking the Massachusetts College & Career Readiness (CCR) Curriculum: Gaps in Support & Recommended Accommodations for Students with Intellectual Disabilities
SESP-009

Mairead Bardho

Teacher Perceptions of School Climate
SESP-010

Kirsten Davidson

A Program Evaluation & Recommendation for Students at Rise Academy
SESP-011

Kathryn Mailloux

Understanding the Connection Between a Sense of Belonging in School & Student's School Success
SESP-012

Caitlyn Lynch

From Observation to Evidence: Comparing the BASC-3 & Traditional Referrals for Tier 2 Support in First Grade
SESP-013

Celine O'Dowd

Disciplinary Discrepancies: Exploring Experiences for 5th Graders on IEPs
SESP-014

Jacklyn Nieves

Student Motivation Questionnaire
SESP-015

Cassandra Rio

Moving Students Toward Adulthood
SESP-023

Holly Lewis

Transfer College Success Bridge
SESP-024

3:30 P.M.



UNDERGRADUATE & GRADUATE STUDENT RESEARCH POSTERS: SCHOOL OF EDUCATION & SOCIAL POLICY

GRADUATE STUDENTS (continued)

Emma Trainor

Support Starts Here: Faculty Training for
Student Mental Health Awareness

SESP-025

Faith Williamson

RISE: Promoting Resilience,
Independence, & Self-Empowerment

SESP-026

Layna Holk

Effectively Advising Students
Transitioning (EAST) Majors

SESP-027

Megan Miller

Foundations For Business Success: A New
Course Integrating Disciplines & Soft
Skills

SESP-028

Dolores Goyette

C.I.T.E. (Campus Integrity Trainings for
Everyone) Task Force

SESP-029

Lauren Orser

Students Promoting Admissions
Recruitment & Knowledge [SPARK]

SESP-030

Julia Tardugno

Cultivating a New Era of Leadership:
Establishing Effective College Leadership
Training

SESP-031

Molly Kueter

A Strategy for Stronger Alumni
Connections

SESP-032

Olivia Vadoros

Beyond Academics: Implementing Social
Emotional Learning in Higher Education

SESP-033

Cailin Currie

Bridging the Gap: Making Higher
Education Accessible to All

SESP-034

Ryan Concannon

Engaging Gen Z Students with AMP

SESP-035

Alex Karelas

Personality & Suicidality: A Systematic
Review of Five-Factor Model Traits as
Predictors of Suicide Risk

SESP-036

Jenna Hines

From Victim to Offender: How Childhood
Sexual Abuse Shapes Cognitive
Distortions, Attachment & Emotional
Regulation in Male Perpetrators

SESP-037

Tyler Papciak

Breaking Barriers: The Potential of
Psychedelic-Assisted Therapy for Post-
Traumatic Stress Disorder in Veterans

SESP-038

Riley Korengel

Breaking the Cycle: Resilience in Children
of Recovering Parents

SESP-039

Meghan Stratton

The Neurodevelopmental Cost of
Addiction: Parental Substance Use & Its
Effects on Emotional Regulation &
attachment in Children

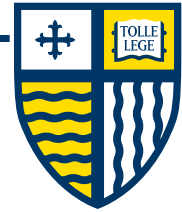
SESP-040

Benjamin Isaacman

The Lasting Impacts of Corporal
Punishment: A Systematic Review of
Long-Term, Adult Outcomes

SESP-041

3:30 P.M.



UNDERGRADUATE & GRADUATE STUDENT RESEARCH POSTERS: SCHOOL OF EDUCATION & SOCIAL POLICY

GRADUATE STUDENTS (continued)

Jen Grant

The Climate Gap: How Privilege Shapes
Climate Vulnerability in the USA
[SESP-042](#)

Kaitlyn Sok

Barriers to School Readiness for Young
Children in Foster Care: A Systematic
Literature Review of Evidence-Based
Interventions
[SESP-043](#)

Stephanie Messina

Effective Interventions for Adolescent
Girls: Social Media & Body Image
[SESP-044](#)

Christy Derolus

Effective Faith-Based Coping Strategies
for Anxiety & Depression Recovery in
Adolescents & Young Adults: A
Systematic Literature Review
[SESP-045](#)

Sofia Gendreau

Empowering Children, Strengthening
Schools: A Systematic Review of Effective
Interventions for Childhood Anxiety
[SESP-046](#)

Alexa C. Rockwell

Access Denied: How Bathroom
Discrimination & School Policies Impact
Transgender & Nonbinary Students'
Mental Health
[SESP-047](#)

Katelyn Fisher

Access & Barriers to Mental Health Care in
Correctional Facilities
[SESP-048](#)

Zahra Ahmadi

Housing Challenges & Policy Gaps for
Immigrant Families in Boston: A
Systematic Literature Review
[SESP-049](#)

Audree Carleton

Broken Bonds: The Lasting Effects of
Divorce & Family Separation on
Attachment & Relationships
[SESP-050](#)

Mackenzie Potvin

Trafficked & Traumatized: The Hidden
Battle for Mental Health Awareness After
Exploitation
[SESP-051](#)



3:30 P.M.



TALKS & MULTIMEDIA PRESENTATIONS: SCHOOL OF EDUCATION & SOCIAL POLICY

UNDERGRADUATE STUDENTS

Dhriti Motwani, Alexa Ballard, Anna Barrett
Predicting Motion: Patterns in Movement
[SESP-054](#)

Kelly Sola, Logan Steele
Exploring Erosion in 2nd Grade
[SESP-055](#)

Derek Marczak, Lilykate Rodgers
A Changing Earth
[SESP-056](#)

Lauren Walsh, Ella Maldonado
Exploring Properties of Matter
[SESP-057](#)

Lily Robb, Paige Lamberson
Light & Shadows For First Grade
[SESP-058](#)

Kelly Lyons, Olivia Erler
Exploring Shadows with Second Graders
[SESP-059](#)

Ashley Padula, Alison Canavan
Exploring Structures & Properties of Matter with Second Graders
[SESP-060](#)

Sofia Maksymiw, Makayla Bogdanski
How water can play a role in the world
[SESP-061](#)

Foster Adams, Tyler Lloyd
Our Experience at SLE
[SESP-062](#)

Daniella Colarusso, Bridget McCoy
Exploring Properties of Materials with Second Graders
[SESP-063](#)

Rachel Bouvier, Addison Donovan
Introduction to Engineering by Constructing Dams to Prevent Erosion
[SESP-064](#)

Sophia Lachance, Natalie Lopez
Investigating Properties of Matter With 2nd Graders
[SESP-065](#)

Amanda Akpomedu, Mackenzie Tower
What's that Sound?
[SESP-066](#)

Alexandria Lewis, Nicole Frassica
The Power of Wind & Water
[SESP-067](#)

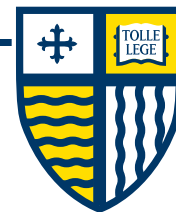
Sara Silva, Kristen Guarente
Forces In the Classroom
[SESP-068](#)

Camryn Woods, Veronica Ortega
2nd Graders Exploring Quick & Slow Earth Events!!
[SESP-069](#)

Jessica Maillet, Cailey Sarrett
Lesson Plan: Sound Waves & Vibrations
[SESP-070](#)



3:30 P.M.



UNDERGRADUATE & GRADUATE STUDENT RESEARCH POSTERS: SCHOOL OF ARTS & SCIENCES

UNDERGRADUATE STUDENTS

Bradley LeMasurier
Exoplanet Research
SAS-001

Ruby Collins
Statistical Analysis of Matchup
Advantages in Clutch MLB Situations
SAS-002

Domenic Picone, Jasmine Syriac
Impact of Febrile-Like Stress on Mouse
Macrophages
SAS-003

**Brianna Vesey, Giulia Martins Cavalcante,
Kae'la Harrigan, Kailey Leclerc, Shania
Polanco, Thomas Purcell**
Nucleoli undergo dynamic changes during
febrile-like stress recovery
SAS-004

Dalia Silva
Giemsa staining revealed differences in
cell cycle between normal diploid &
cancer cells
SAS-005

Marissa Borges
The Evolution of Antibiotic Resistance &
its Influence on Herd Immunity
SAS-006

Estelle Arseneau, Thomas Purcell
Illuminating Science: Exploring
Biotechnology Through Green Fluorescent
Protein (GFP)
SAS-007

**Parker Parker, Erin Lincoln, Sudesh
Khatrri, Dr. Azam Noori**
Comparative Phenotyping of Tomato
Seedling Root Architecture Under
Nanoparticle Exposure Using WhinRHIZO
& ImageJ
SAS-008

Miyah Mega
Analysis of DNA Attachment to Silver
Nanoparticles
SAS-009



3:30 P.M.



UNDERGRADUATE & GRADUATE STUDENT RESEARCH POSTERS: SCHOOL OF ARTS & SCIENCES

UNDERGRADUATE STUDENTS (continued)

Carly Caswell, Ellen Hubbard

Measuring Catechins in Tea Samples using
HPLC & Fluorescence Spectroscopy

[SAS-016](#)

Daniella Buccheri

1:1 Inclusion Complex of β -cyclodextrin &
Fluorene

[SAS-017](#)

BIO2018 Students

Doggie DNA: Exploring the relationship
between genes & appearance in Canis
familiaris

[SAS-018](#)

Kaéla Harrigan

Baffling Bacteria: Examining Antibiotic
Resistance Genes in the Merrimack River

[SAS-019](#)

Kaéla Harrigan

One Drop of Blood, Two Drops of Hate: The
Science Behind Racism

[SAS-020](#)

Megan Hayes

Reimagining Relationships: Expanding Our
Community to Combat the Climate Crisis

[SAS-021](#)

Autumn Vance

Do No Harm: The Impact of Abortion Bans
on The Ability of Obstetrician-
Gynecologists to Sufficiently Perform Their
Duties

[SAS-022](#)

Patricia Nicole Diaz Pena

Child influencers, two words that shouldn't
be together

[SAS-023](#)

Ryan Landry

A Rebel Girl's Example: Elizabeth Gurley
Flynn & Her Life as a & Labor Leader,
Feminist, & Political Radical

[SAS-024](#)

Haley Bergen

The Pandemic Skip & the Power of
Nostalgia: Why Gen Z is Drawn to
Animated Kids Shows

[SAS-025](#)

Joshua Linnehan

The Legalization of Sports Gambling & Its
Unspoken Long Term Consequences

[SAS-026](#)

Natalie Harwood

The Lack of Access to Books: The Impact
of Book Banning within Schools & Prisons

[SAS-027](#)

Abigail Cummins, Jazlyn Sinclair

How Do Merrimack Students Respond to
Construction Noise on Their Campus?

[SAS-028](#)

Tylor Manzo, Leo Mamouni

How does College major shape students'
Climate Change Anxiety?

[SAS-029](#)

Paige Felton, Logan McCabe

Environmental Justice & Social Privilege

[SAS-030](#)

Madeline Cherry, Darla Mahoney

Socializations & the Adoption of
Sustainable Practices

[SAS-031](#)

Ava Vitale, Dimitrios Tsoumbanikas

How does age influence the
environmental issues that people care
about?

[SAS-032](#)

Jhonell Abreu, Sam Clock

What are the goals & motivations of
Environmental Justice Advocates?

[SAS-033](#)

3:30 P.M.



UNDERGRADUATE & GRADUATE STUDENT RESEARCH POSTERS: SCHOOL OF ARTS & SCIENCES

UNDERGRADUATE STUDENTS (continued)

Joely Ortiz, Billy Hawkins

BIPOC Connections with
Sustainability/Agriculture

SAS-034

Kevin Bonsall, Nick Belanger

Socialization & Environmental Behaviors

SAS-035

Raynna Collier, Daniel Ayanian

How Does Knowledge About Corporate
Environmental Malfeasance Influence
Decision-Making?

SAS-036

Julia MacDonald

Environmental Knowledge & Awareness of
Sustainability

SAS-037

Rebecca Poole, Joseph DeMoura

Mental Health & Nature

SAS-038

Julia Hamilton

Protecting the Public from the Release of
Hazardous Materials due to Climate
Related Disasters in Orange County,
Florida

SAS-039

Brenda da Silva, Abigail Dunn, Klea

Pocoli, Autumn Vance

RiSC: Risk-taking, Sleep & Cortisol

SAS-041

Alex Gajewski, Caroline Pongratz

Breath Regulation for Enhancing Attention
& Task Handling in Executive Function

SAS-042

Blake Hickey

BRAVE: Breathing, Risk-taking, Anxiety, &
Vagal Enhancement

SAS-043

Vanessa Aiello

Social Media Use & Well Being: The Impact
of Problematic Social Media Use on the
Well Being of College Students

SAS-044

Molly Campagnone

Exploring the Mental Health Impacts of
Food Allergies

SAS-045

Carolina Santana

Psychological Distress due to Cultural
Stress, Family Relationships & Family
Obligations within First Generation
Hispanic/Latinx College Students

SAS-046

**Emily Bourassa, Brenna Lawlor, Gabrielle
Miller**

Can You Really Multitask?

SAS-047

**Lucy McAllister, Emma Carr, Emily
Federici**

Dividing Attention: How Effectively Can
We Multitask?

SAS-048

**Hannah Perham, Ashley Pinard, Carolina
Santana**

Is Multitasking Possible?

SAS-049

**Annie Delaney, Emily Brouder, Jillian
Trudeau, Marissa Meddock**

Waldo or Wal-don't: A Study in Attention
& Multitasking

SAS-050

Jillian Trudeau

Connections Between Home
Environmental Factors & Risk-Taking
Behavior in Preschool-Age Children

SAS-051

Berkeley Gore, Holly Angelone

Tasking with a Twist: Turtle Edition

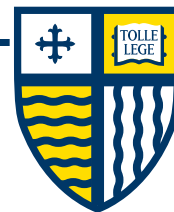
SAS-052

Taylor Pattison, Justin Charak

Multitasking Effects on Attention

SAS-053

3:30 P.M.



UNDERGRADUATE & GRADUATE STUDENT RESEARCH POSTERS: SCHOOL OF ARTS & SCIENCES



UNDERGRADUATE STUDENTS

(continued)

Hailey Donovan, Emma Patch, Faith Purvis, Jenna Sunderland

Animal Noises & Jumbled Words: A Multitasking Test

SAS-054

Maci Chapman, August Dexter, Abigale Long

Juggling Like a Pro or Dropping the Ball?

SAS-055

Ryan Dunn, Angela Rios, Julia Watson

The Egg Hunt

SAS-056

Jenna Sunderland

Personality through Playlists

SAS-057

Alexis Cloutier, Madaline Martin, Carter Cress

Split Focus: Investigating Visual Attention with Competing Tasks

SAS-058

Adrianna Benites

The impact of stress on academic achievement

SAS-059

GRADUATE STUDENTS

Kacy Grijalva

Synthesis of Pharmacotherapies For Methamphetamine Addiction

SAS-010

Hermengarda Catoquessa

Organic Synthesis of a Derivative of 4-Piperidone Hydrochloride Monohydrate to Treat Methamphetamine Addiction

SAS-011

Madalyn Hymowitz

Quantitative Analysis of Pharmaceutical and Personal Care Products (PPCPs) in the Merrimack & Spicket Rivers

SAS-012

Estelle Arseneau, Clare Bowen, Mariia Diahilieva, Anthony Fernandez

Greening the Synthesis of the Metal-Organic Framework, HKUST-1

SAS-013

Isabella Beaton

Antibiotic Resistance & Antibiotic Resistant Bacteria in the Merrimack River

SAS-014

Waleed Khayat

Measuring Biomarkers in Plasma with Fluorescence Spectroscopy

SAS-015

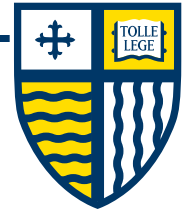
Melanie Gaudet

Are Environmental Justice Communities Shifting in Response to Urban Development?

SAS-040



3:30 P.M.



UNDERGRADUATE & GRADUATE STUDENT RESEARCH POSTERS: SCHOOL OF ENGINEERING & COMPUTATIONAL SCIENCES

UNDERGRADUATE STUDENTS

Chris Rincon

Investigating Doping Effects in High Entropy Alloys for Enhanced Mechanical Properties

SECS-001

Declan Dorgan

Spickett River Model

SECS-002

Olivia Montejunas

Pemigewasset River Model

SECS-003

Benjamin Nourai

Pennichuck Brook SWMM Model

SECS-004

Ryan Kelleher

Contoocook River Model

SECS-005

Cameron Horta

Winnepesaukee River Model

SECS-006

George Sachs-Walor

Site Characterization in Memphis, Tennessee for Earthquake Site Response Analyses

SECS-007

George Sachs-Walor

Modeling the Sudbury, Assabet, and Concord Rivers

SECS-008

Marianna D'Amelio

Piscataquog River Model & Analysis

SECS-009

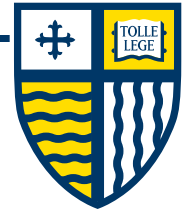
Veronica Boure

Model of Shawsheen River

SECS-010



3:30 P.M.



UNDERGRADUATE & GRADUATE STUDENT RESEARCH POSTERS: SCHOOL OF ENGINEERING & COMPUTATIONAL SCIENCES

UNDERGRADUATE STUDENTS (continued)

Ava Minisolo

Griffin Brook River Analysis & Model
SECS-011

Othman Alfadhalah

Souhegan River Model
SECS-012

Jomar Bey

Beauty of Nashua River
SECS-013

Luke Fournier

Cochichewick River Analysis
SECS-014

Salvatore Esposito

Suncook River
SECS-015

Irvin Guzman

Geotechnical Data Compilation for Site
Response in the Central & Eastern United
States & Seismic Velocity Model
Development for New York City
SECS-016

Kelsey True

Biomechanical Force-Sensing Glove Design
& Development
SECS-017

**Veronica Bourre, George Sachs-Walor,
Zachary Smith, Mayson Silva**

Structural Health Monitoring for Civil
Engineering
SECS-018

**Othman Alfadhalah, Marianna D'Amelio,
Rachel Howe, Ashton Kimball, Alexander
Urbaniak**

Structural Health Monitoring at Merrimack
SECS-019

**Alexander Cook, AJ Urbaniak, Ava
Minisolo, Olivia Montejunas**

Reading Department of Public Works
(DPW) Redesign
SECS-020

**Salvatore Esposito, Luke Fournier,
Cameron Horta, Alyssa Juzwick, Ryan
Keleher**

CE Design Project: Reading DPW
Redesign
SECS-021

**Veronica Bourre, Marianna D'Amelio,
Declan Dorgan, Benjamin Nourai, Ryan
Russo**

Reading Department of Public Works
Redesign & Expansion
SECS-022

**Othman Alfadhalah, Irvin Guzman,
George Sachs-Walor, Zachary Smith,
Steven Webb**

Improvements to Reading, MA
Department of Public Works
SECS-023

**Alexis Byrne, Ben McDonnell, Daniel
Ayanian, Summer O'Rourke, Amber Smith**
Understanding Where Microplastics are
Located & their Concentration in the
Lamprey River

SECS-024

Derek Costello, Emily Brown

Celtic Knot Research Arcade
SECS-025

**Matthew Hendriks, Zachary Hubbard,
Aidan Dorgan, Ethan Grella, Jacob
Vergow, John Ryan**

Senior Design Vex High Stakes
SECS-026

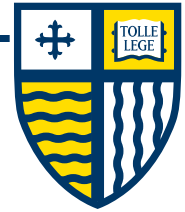
**Madison Gant, Cade Collins, Jazzy
Moreno, Matt Giannasca, Zak Mahaba**

Senior Design Project Vex High Stakes
SECS-027

**Ryan Dacy, John Hart, Evan O'Brien-
Nichols, Eagan Olson, John Pistorino,
Brandon Pzeny**

Vex University & College Competition
SECS-028

3:30 P.M.



UNDERGRADUATE & GRADUATE STUDENT RESEARCH POSTERS: SCHOOL OF ENGINEERING & COMPUTATIONAL SCIENCES

UNDERGRADUATE STUDENTS (continued)

Cole Farrell, William Scanlon, Gregory Sencabaugh, Augustus Syracuse, Jackson Thomas, Sean White
Senior Design Project VEX University High Stakes
[SECS-029](#)

Chris Rincon, Lucas Streng, Samantha Fagundes, Rebecca Linane, Nathan Lajeunesse, Nicholas Tessitore
VEX Senior Design Spring 2025
[SECS-030](#)

Charles Cassaro
Sleep, Travel & Slumps: Measuring Jet Lag's Impact on MLB Games
[SECS-031](#)

Mari Leonard
Data Mining to Understand the Impact of the "Circadian Advantage" in the NHL
[SECS-032](#)

Zachary Laher
NFL Circadian Data Analysis Project
[SECS-033](#)

Connor Thornell
The Circadian Advantage: Time Zone Effects on NBA Team Performance
[SECS-034](#)

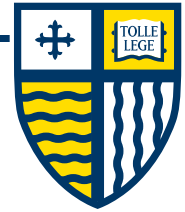
John Ryan, Nicholas Tessitore, Eagan Olson
Perception of Social Robots: Storytelling for Public Library Patrons
[SECS-035](#)

Skye Tucker, R.A. Caldwell Jr, Azam Noori
Mechatronic Model of Phytoremediation using Tomato Plants
[SECS-036](#)

Veronica Boure, Otniel Castanos Marte, Suzanne Collins, Marcus Cronin, Junior De Los Santos, Julissa Merida, Robert Midura, Chesca Pais, Liam Powers, Mayson Silva, James Stanford, Abigail Van Kirk
Student Steel Bridge Competition
Presented at 2025 American Society of Civil Engineers (ASCE) Northeast Student Symposium
[SECS-037](#)



3:30 P.M.



UNDERGRADUATE & GRADUATE STUDENT RESEARCH POSTERS: SCHOOL OF NURSING & HEALTH SCIENCES

UNDERGRADUATE STUDENTS

Gabrielle Chase, Kailey Leclerc, Evelyn Ocegueda
Succinate Regulates Age-Associated T Cell Inflammation
[SNHS-001](#)

Lydia Gugliuzza, Michaela Niceforo
Succinate Dehydrogenase Impacts T Cell Inflammation by Regulating Mitochondrial Structure & Function
[SNHS-002](#)

Chelsea Miller
Healthcare utilization for pelvic pain & pain catastrophization
[SNHS-024](#)

Gianna Cook
Impact of Pain Management Strategies on Pelvic Pain
[SNHS-025](#)

Rachel Mathes
Hormonal Birth Control Amongst Merrimack College Students
[SNHS-026](#)

Gianna DaSilva
Understanding the Relationship Between Pelvic Pain & Sleep Quality in Female College Students
[SNHS-027](#)

Makayla Hutchinson
HIV Care Providers' View on Exercise for Smoking Cessation
[SNHS-031](#)

Skylar Girard, Nick SantaBarbra
The Role of Mental Health & Lifestyle Factors on Cognitive Function among Older-Adult People with & without HIV
[SNHS-057](#)

Emily Collins, Carolina Santana & Eleanor Shonkoff
Assessing Nutritional Value of Food in Local Food Pantries: Preliminary Results
[SNHS-069](#)

Hannah Phillips
The Impact of Endocrine Disruptors on Fertility & Reproductive Health
[SNHS-070](#)

Nicholas Spinale, Justin Sensale
Measuring the Hidden Vitamin: Folic Acid Quantification in Milk via HPLC & LC-MS-MS
[SNHS-071](#)

Madalynn Gilpin
The Role of Tumor-Associated Macrophages in the Link Between Endometriosis & Ovarian Cancer: Implications for Early Detection & Treatment
[SNHS-073](#)



3:30 P.M.



UNDERGRADUATE & GRADUATE STUDENT RESEARCH POSTERS: SCHOOL OF NURSING & HEALTH SCIENCES

GRADUATE STUDENTS

Carla Bouchrouche

Needs Assessment: Importance of
Strength & Conditioning for Older Adults
[SNHS-003](#)

Rachel Bjorgan

Overcoming Barriers to Extracurricular
Participation in High School Adolescents
[SNHS-004](#)

John Elie

Community-Based Interventions for
Elderly Mental Health: A Systemic
Literature Review
[SNHS-005](#)

Sydney Babb

Addressing Youths' Sexual Health: Policy
Recommendations for Education,
Prevention & Treatment of STDs/STIs
[SNHS-006](#)

Brandon Kierce

Training & Recovery in High-Level
Motorsport Athletes
[SNHS-007](#)

Cassidy Avenick

Emerging Risk Factors to Chronic
Exertional Compartment Syndrome
[SNHS-008](#)

Francis Walker

Transforming Lives: The Importance of
Health Coaching in Today's Society
[SNHS-009](#)

Rhea Banthia

The Future of Workplace Wellness:
Embracing Mindfulness-Based
Interventions
[SNHS-010](#)

Carla Guirguis

Anterior Mid-Cingulate Cortex: The Power
of the Unbalanced Mind
[SNHS-011](#)

Katrina Lewis

Engaging the Whole Student: Connecting
Wellness to Academic Success
[SNHS-012](#)

Allie Lahiff

Revolutionizing Hip Replacement:
Bridging Innovation & Patient Care with
Stryker's Mobile Bearing Hip System
[SNHS-013](#)

Kris Mekal

The Importance of Effective
Organizational Communication
[SNHS-014](#)

Kelsey Clark

MFFC Needs Assessment: Leveraging
Primary Data for Strategic Planning &
Advocacy in Public Health Organizations
[SNHS-015](#)

Madison Sanborn

The Importance & Reform of On-Site
Mental Health Services in Long Term Care
[SNHS-016](#)

Makenzie Schussler

Understanding Psychological Barriers to
Strength Training in Endurance Athletes
[SNHS-017](#)

Valerie Eckenroth

Promoting the Benefits & Importance of
Utilizing a Medical Organizational Model
in Collegiate Athletic Training
[SNHS-018](#)

Rece Poulin

Adapting Training for Performance: A
Body Composition-Based Program
Evaluation
[SNHS-019](#)

Natalia Arcos Rivera

Nutrigenomics and Performance:
Optimizing Recovery and Adaptation for
International Student-Athletes in U.S.
Collegiate Sports
[SNHS-020](#)

3:30 P.M.



UNDERGRADUATE & GRADUATE STUDENT RESEARCH POSTERS: SCHOOL OF NURSING & HEALTH SCIENCES

GRADUATE STUDENTS (continued)

Jake Blaisdell

Design & Implementation of a Leadership
Council in Collegiate Athletics

SNHS-021

Farideh Bahlouli

Empowering Mattapan: A Community-Led
Needs Assessment for Equitable Change

SNHS-022

Farideh Bahlouli

The Impact of Pelvic Pain on Academic
Performance & Social Engagement Among
Female College Students

SNHS-023

Catherine Schultz

Looking Beyond the Diagnosis:
Understanding Attribution in Cardiac
Rehab Adherence

SNHS-028

Jonathan Borg

Conditioning For Change: A Strength
Coach's Guide to Navigating Career Shifts

SNHS-029

Kendall Nemish

Fatigue Management Using Catapult &
More Budget Friendly & Practical
Alternatives

SNHS-030

Matteo Sementa

Force Plate Playbook: A Guide to
Improved Performance

SNHS-032

Alex Lacerda

The Need for Speed: Techniques, Training,
& Who Gains the Most

SNHS-033

Ryan Austin

Squat Biomechanics: A Comprehensive
Approach to Strength, Mobility &
Reducing Injury Risk to Lower Back

SNHS-034

Shannon Connolly

Breaking Barriers: A Socioecological
Approach to Sustainable Healthcare
Access in Underserved Costa Rican
Communities

SNHS-035

Patrick Hanlon

The Ultimate Soccer Assessment

SNHS-036

Alexander Zapata

Neurocognitive-Parasympathetic-Active
(NPA) Recovery System for Collegiate
Athletes

SNHS-037

Lillian Bodington

Perceptions of Strength Training in
Division I Cross Country Athletes: An
Online Survey

SNHS-038

Anthony Fortuna

Elite Training Solutions

SNHS-039

Kara Cecchini

Bridging Science & Coaching

SNHS-040

Zachary Bonnell

Understanding Catapult & its Alternatives:
A Manual

SNHS-041

Dorothy Reil

Developing a Comprehensive Readiness
Assessment for U.S. Soldiers

SNHS-042

Christopher Vitullo

Force Profiling for Smarter Training:
Identifying Unilateral vs Bilateral
Indicators

SNHS-043

3:30 P.M.



UNDERGRADUATE & GRADUATE STUDENT RESEARCH POSTERS: SCHOOL OF NURSING & HEALTH SCIENCES



GRADUATE STUDENTS (continued)

Madison Barber

A Practical Guide for Strength & Conditioning Coaches to Engage with Female Athletes: Menstrual Cycle
SNHS-044

Tito Hernandez

The Recovery Playbook: A Practical Guide for Coaches & Athletes
SNHS-045

Allyson Kirck

Power in Motion: A Plyometric Rotational Training Manual for Explosive Athletic Performance
SNHS-046

Nico Wilbur

Optimizing Performance & Injury Prevention: A Mobility-Based Assessment & Training Guide for Athletes
SNHS-047

Madison Cardaci

The Impact of Mental Health on Athletic Performance at the Collegiate Level
SNHS-048

Ethan Herman

How to Physically Train to be a Member of a Law Enforcement Agency/Department
SNHS-049

Vanessa Carvajal

A New Prehabilitation Model: A Faster Path to Post-Surgical Recovery
SNHS-050

Livia Serak

Strength & Conditioning for Artistic Sports: Cheerleading, Dance & Gymnastics
SNHS-051

Christian Menide

Understanding Failures in Nursing Home Administration
SNHS-052

3:30 P.M.



UNDERGRADUATE & GRADUATE STUDENT RESEARCH POSTERS: SCHOOL OF NURSING & HEALTH SCIENCES

GRADUATE STUDENTS (continued)

Shelby Peterson

Goals & Impact of Cardiac Fitness in
Pediatric Patients Post Heart Transplant:
A Case Study
[SNHS-053](#)

Caleb Lambert

An Excel-Based Load Management System
for Athletes
[SNHS-054](#)

Ashley Doyle

Active Aging: Proposed Solution to
Challenges of Elderly Participation in
Recreation Programs in Massachusetts &
New Hampshire
[SNHS-055](#)

Casey Belden

A Review & Update of Physical Education
in the U.S.
[SNHS-056](#)

Akiva Bluh

Applied Sports Science & Analytics: A
Comprehensive Guide for Predicting
NCAA-to-NFL Success in Football Players
[SNHS-058](#)

Daniel Bardgett

Movement & Performance Assessment for
Collegiate Athletes
[SNHS-059](#)

Dan Blatman

Olympic Cleans: Functions, Coaching &
Forgotten Details
[SNHS-060](#)

Brooke Bolduc

Merrimack College Strength &
Conditioning: Restructuring the Program
[SNHS-061](#)

Koby Konz

Therapeutic Potential of Nitric Oxide
Supplements for the Enhancement of
Sleep Quality in Chronically Under Slept
Active Individuals
[SNHS-062](#)

Sena Morimoto

Hydration Assessment & Protocol:
Emergency First Responders
[SNHS-063](#)

Carson Kindred

A Cost-Effective Approach to Fatigue
Monitoring
[SNHS-064](#)

John O'Neill

Understanding the Body Inside & Out:
O'Neill Movement Analysis
[SNHS-065](#)

Ryan Becker

Ankle Health Assessment & Injury Risk: A
Screening & Intervention Guide for
Basketball & Volleyball Athletes
[SNHS-066](#)

Conor Pierce

Building the Physically Optimal Offensive
Line: A Guide
[SNHS-067](#)

Scott Schwartz

Comprehensive Exercise Prescription
Playbook
[SNHS-068](#)

Emily Collins

Sport-Specific Factors in Disordered
Eating & Compulsive Exercise
[SNHS-072](#)

ACKNOWLEDGEMENTS

The completion of this undertaking could not have been possible without the assistance and participation from so many whose names may not all be enumerated. Their contributions are sincerely appreciated and gratefully acknowledged. We would especially like to express deep appreciation to the faculty and community partners who supported and mentored student research creative achievement during this academic year.

We would like to acknowledge the Office of the Provost, the Office of Marketing and Communications, McQuade Library, the MACK Print Center, and the RCAC committee for going above and beyond in their support for the 2025 Research & Creative Achievement Conference.



MERRIMACK COLLEGE