



THINKING MATTERS

2025

FRIDAY, APRIL 18, 2025

8:00 AM—4:30 PM

ABROMSON COMMUNITY EDUCATION CENTER
UNIVERSITY OF SOUTHERN MAINE, PORTLAND CAMPUS

Thinking Matters 2025 highlighting research from:



The Roux Institute
Northeastern University

ABOUT

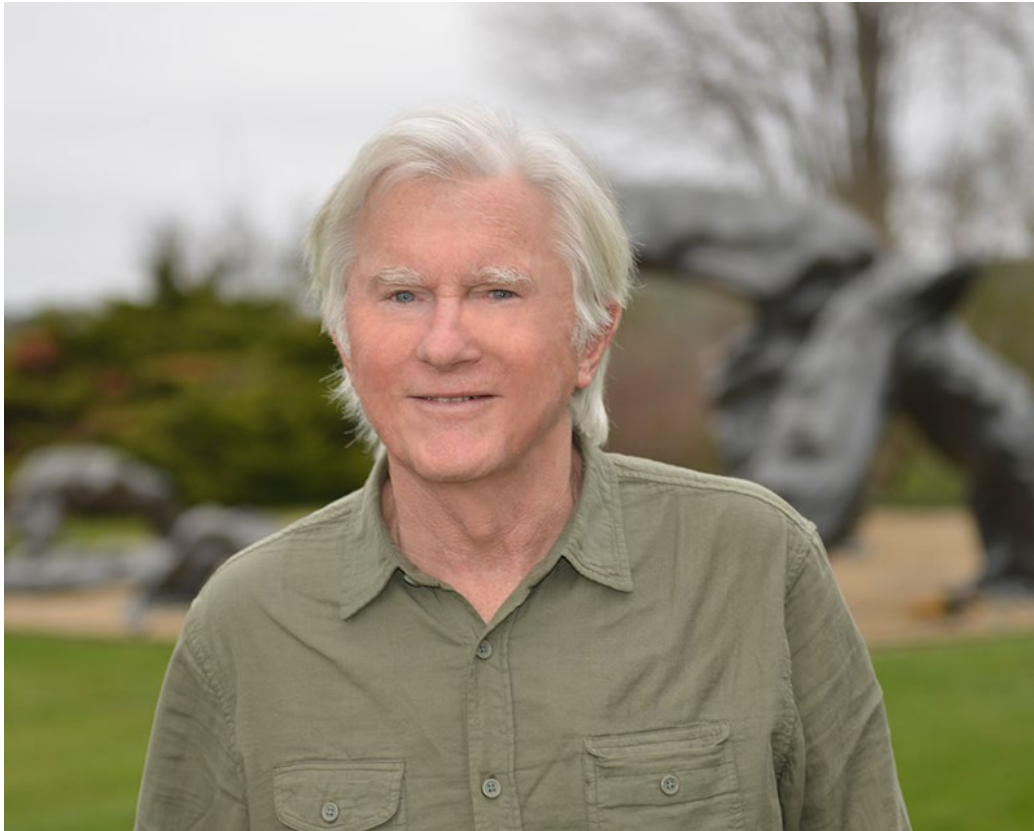
Innovative research and creative work—whether in a classroom, a lab, or a studio—are the heart of any dynamic university. The Thinking Matters symposium showcases student and faculty collaborations across USM campuses and beyond, promoting high quality student-faculty research. Thinking Matters enables students and faculty to share their work with each other, their colleagues, and the general public.

For more information please visit:
<https://usm.maine.edu/thinking-matters/>

THINKING MATTERS 2026—SAVE THE DATE

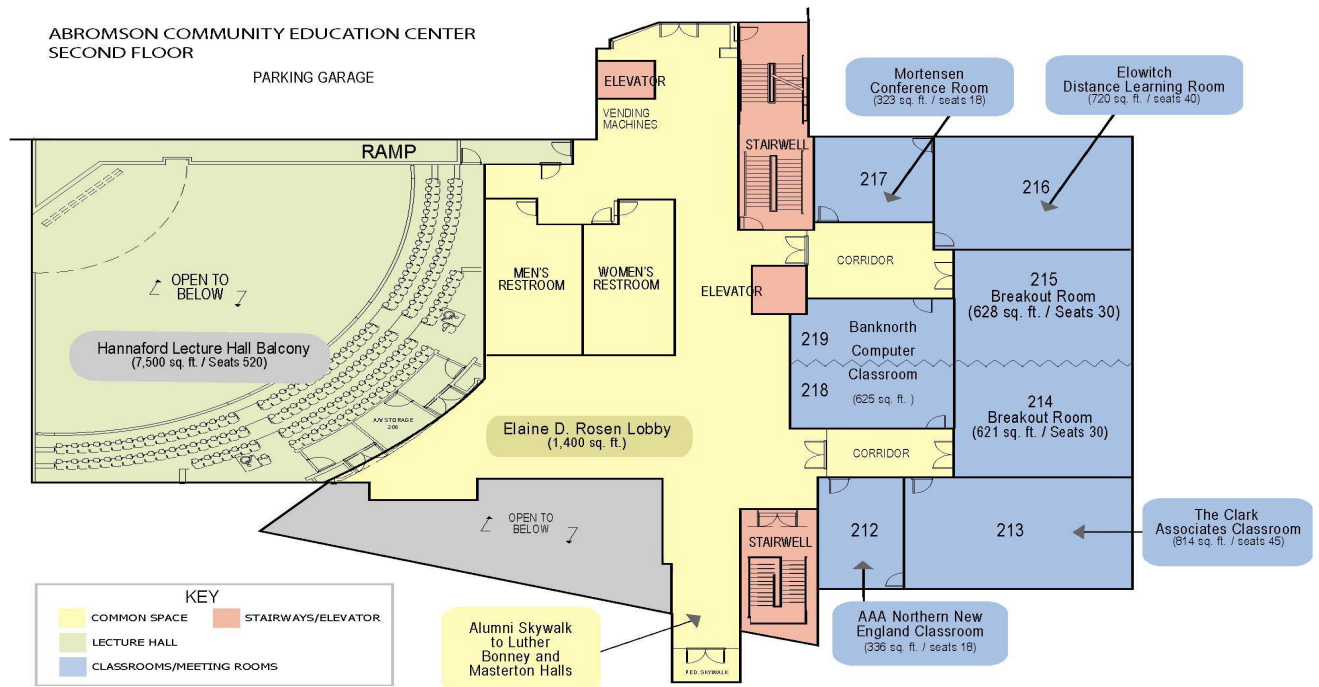
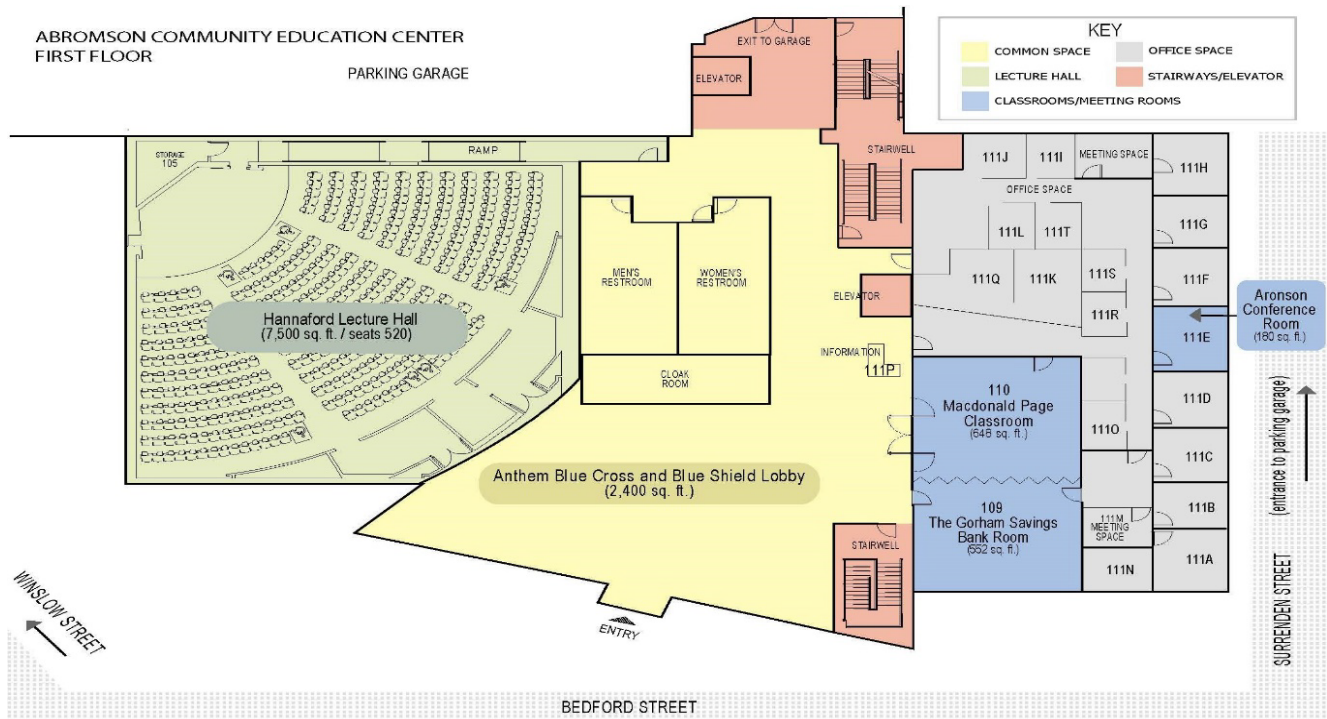
APRIL 17, 2026

KEYNOTE INTERVIEW



David Evans Shaw '76G, '15H, CEO of Black Point Group, is a prominent American business and social entrepreneur. His business creation, leadership, investment and board experience include IDEXX Laboratories (founder, CEO), Ikaria Pharmaceuticals (founding CEO, chair), Covetrus (co-founder, chair), Cyteir, Modern Meadow, Ironwood Pharmaceuticals, Itaconix, Ovation, Cyteir, Venrock Associates, New Mountain Capital, Leerink Partners, Polaris Venture Partners and others. He has served on the faculty of Harvard's John F. Kennedy School of Government, and the advisory board of the Center for Public Leadership. He is treasurer emeritus of the American Association for the Advancement of Science, chair-emeritus of The Jackson Laboratory, a founding director of the US Olympic and Paralympic Museum, a trustee of the National Park Foundation, a founding chair of the Sargasso Sea Alliance and Aspen High Seas Initiative, as a Patron of Nature to the International Union for the Conservation of Nature, as a member of Ocean Elders, and as founder of Shaw Innovation Fellows and Second Century Stewardship for America's national parks. A father of three and grandfather of twelve, he resides in Maine and Florida.

ABROMSON CENTER



AGENDA

TIME	EVENT	LOCATION
8:00 AM – 8:30 AM	CHECK-IN & BREAKFAST	ABROMSON CENTER LOBBY
8:30 AM – 8:40 AM	OPENING CEREMONY <ul style="list-style-type: none"> R. BRUCE THOMPSON PROFESSOR OF PSYCHOLOGY - HUMAN DEVELOPMENT 	ABROMSON CENTER HANNAFORD HALL
8:40 AM – 9:00 AM	WELCOMING REMARKS <ul style="list-style-type: none"> JACQUELINE EDMONDSON PRESIDENT, USM MATHEW J. GOODMAN ACTING VICE PRESIDENT, SMCC 	ABROMSON CENTER HANNAFORD HALL
9:00 AM – 9:45 AM	KEYNOTE INTERVIEW WITH DAVID SHAW '76G, '15H ABOUT HIS BOOK <i>WAVE MAKING</i>	ABROMSON CENTER HANNAFORD HALL
9:45 AM – 10:15 AM	MEET THE AUTHOR & BOOK SIGNING WITH DAVID SHAW	ABROMSON CENTER LOBBY
10:00 AM – 11:30 AM	POSTER SESSION #1	ABROMSON CENTER LOBBY & MEZZANINE
10:00 AM – 11:30 AM	ORAL SESSION #1	ABROMSON CENTER BREAKOUT ROOMS
11:30 AM – 12:15 PM	LUNCH	ABROMSON CENTER LOBBY
12:15 PM – 1:45 PM	POSTER SESSION #2	ABROMSON CENTER LOBBY & MEZZANINE
12:15 PM – 1:45 PM	ORAL SESSION #2	ABROMSON CENTER BREAKOUT ROOMS
1:45 PM – 3:30 PM	POSTER SESSION #3	ABROMSON CENTER LOBBY & MEZZANINE
1:45 PM – 3:30 PM	ORAL SESSION #3	ABROMSON CENTER BREAKOUT ROOMS
2:00 PM – 4:30 PM	GRO FELLOWS PRESENTATIONS	ABROMSON CENTER HANNAFORD HALL
4:30 PM – 5:30 PM	GRO FELLOWS RECEPTION	ABROMSON CENTER ROOMS 109 & 110

POSTER SESSIONS

POSTER SESSION 1, 10:00 AM – 11:30 AM, ABROMSON CENTER

STUDENT PRESENTER(S)	FACULTY MENTOR	PRESENTATION TITLE
Adam Savage	Daniel Moore	How Early-Life Environment Shapes Type 2 Diabetes Risk
Adriana Lovric	Sarah Lockridge	Addressing Violent Extremism and Implicit Bias: Mindbridge's Neuroscientific and Psychological Approach
Alayna Carey	Daniel Moore	Genetic Insights into Polydactyly
Alexandra Aznar	Daniel Moore	Cystic Fibrosis: Genetic Breakthroughs and Ongoing Treatments
Aysel Hamlin	Paul Caron	Opioid Epidemic in Maine: An Analysis of Increasing Overdose-Related Deaths Following the Coronavirus
Benjamin Moore	Jono Anzalone	Leveraging EPR to Address Climate Change with a Focus on Fossil Fuels
Emily Granholm	Daniel Moore	How Covid Vaccines are Made and Modified
Emily Ireland Kristin Palmsten Heather Lipkind Christina Ackerman-Banks	Katherine Ahrens	Characteristics and Incidence of Lactational Mastitis among Postpartum People in Maine 2016-2022
James (Jay) Morrison	Daniel Moore	Physiological and Genetic Effects of Domestication; A Review of Scientific Literature
Jordyn Baker	Daniel Moore	The Correlation Between Pigmentation and Congenital Deafness in the Border Collie Dog Breed
Katrin Dumont	Dami Alegbeleye	Women In Leadership: Mentorship and Networking Opportunities
Kayden Russell	Daniel Moore	Impact of Invasive Plants on Diversity
Madeleine Gray	Dan Jenkins	Developing a Followership Identity: A Grounded Theory
Natalie Styles	Daniel Moore	The Safety and Long Term Effects of Mitochondrial Donations
Owen Reese	Daniel Moore	Snake Morphs: The Genetics Behind Pigmentation Patterns In Ball Pythons
Paige Imperato	Daniel Moore	ARGs & Chronic Disease: How Antibiotic Resistance Genes Impact the Progression of Type II Diabetes
Sean Barry	Daniel Moore	Genetic Linkages Between Autism and ADHD
Trey Crego	Jono Anzalone	Healthcare Access for Migrants: Policy Analysis and Opportunities

POSTER SESSIONS

POSTER SESSION 2, 12:15 PM – 1:45 PM, ABROMSON CENTER

STUDENT PRESENTER(S)	FACULTY MENTOR	PRESENTATION TITLE
Abigail Ouellette	Joseph Staples	Quantifying Tree Surface Roughness and Stress Indicators in Relation to Age, Growth Rates, and Historical Climate Variables in Maine's Forests
Abigail Parker	Joseph Staples	Measuring Respiratory Metabolism in Adult Female Ixodes scapularis at Different Engorged States
Ankit Basnet	Mehrdaad Ghorashi	Technical Feasibility Analysis of Reaction Control Wheel in Two Wheelers for Stability Control
Brendan Kellogg Allison Fogg	Rachel Lasley-Rasher	Seasonal Dynamics of Zooplankton Community Structure in The Damariscotta River Estuary
Christian Taylor	Scott Eaton	Mapping Coastal Estuaries: Design of Drifter Buoys for Aquaculture and Research in Maine
Derek Larrabee	Carlos Lück	Synchroscope Repair and Enhancement for Educational Use
Gabby Scott	Douglas Currie	Anti-cancer agent exposure affects brain cells in vitro
Grace Brenner	Rachel Casey	"You're Getting a Little Big for This": Depictions of Fatness in Disney Animated Films
Harris Milliken	Carlos Lück	Robotic arm operation in 2D space with redundancy
Ian Desjardins	Scott Eaton	Low-Cost Pressure-Based Storm Surge Monitoring System
Marin McPhee	Elizabeth Parks-Stamm	Psychological Distance and the Negativity Bias
Marissa Williams	Elizabeth Parks-Stamm	Worry Lists, Productivity, and Well-Being; How Goal Setting can Lead to Improved Mental Health
Matthew Burnett	Dami Alegbeleye	The Role of Team Captain's Leadership on Team's Culture and Performance
Nancy Flagg Robert Sanford	Nathan Hamilton	Common Ground Leadership; Drone Mapping as a Resource to Assist Leadership development within Coastal Maine Communities
Saige Plourde	Luke Truman	Sustainability Through Diversity in Craft Beverages
Samuel Davis	Mehrdaad Ghorashi	Influence of Cold Environment on the Shape Memory Recovery of Nitinol for Space Applications
Taylor Brookes	Carlos Lück	Smart Terrarium for Isopods

POSTER SESSIONS

POSTER SESSION 3, 1:45 PM — 3:30 PM, ABROMSON CENTER

STUDENT PRESENTER(S)	FACULTY MENTOR	PRESENTATION TITLE
Alex Kuvaja	Jono Anzalone	Preserving Intangible Cultural Heritage of Climate Displaced People in Portland, Maine
Althea Laprey	Joseph Staples	Respiratory Activity and Metabolic Strategy During the Pre-Pharate Adult Stage in the Common Flesh Fly (<i>Sarcophaga bullata</i>)
Anna Garrett Hannah Keohane	Catherine Miller	Seroprevalence of West Nile Virus in Southern Maine, USA
Ashley Salguero-Gonzalez	Douglas Currie	The Impact of Features on Eyeglasses
Caroline Thompson	Jono Anzalone	Uprooted Minds: The Mental Health Toll of Environmental Displacement
Catherine Taylor Richa Arya	Kimberly Snow	Workforce Development Programming for Older Adults: Participant Experience and Motivations
Cayden Poisson-Bragdon	Amir Kordijazi	Design of Antimicrobial Surfaces for Mars Exploration Spacecraft
Connor Burgess Kyle Douin	Amir Kordijazi	Automated Contact Angle Tester (ACAT)
Dean Syed	Luke Truman	Supporting Sustainability in Maines Brewing Industry
Hannah Keohane Catherine Miller Anna Garrett Matthew Oberholtzer Alex Palma	Catherine Miller	Blood meal analysis in the invasive mosquito <i>Aedes japonicus</i> to identify novel reservoir usage and assess arboviral risk to humans in Southern Maine
Kevin Nolan	Ashanthi Maxworth	Object Identification through Machine Vision for Quality Control
Leslie Lorentzen	Emily Ferry	Building Climate Resiliency: Empowering Community Health Workers Through Education
Samuel Hillman	Mehrdaad Ghorashi	Active Roll-Stability Control of a Ship Model
Scott Kaufman	Scott Eaton	Designing and Fabricating the USM Coaster Derby Car Rear Suspension and Braking System
Shane Kilby	Michael Davis	Flow Optimization of a 90-degree Pipe Bend
Synthia Ladner	Meg Hausman	IDEXX membrane filtration study
Thomas Wreck	Jono Anazalone	Climate Migration Outcomes: Work Now! Oar! Fail-Later "Oaring like madmen of the sea"
Tymur Sabirov	Asheesh Lanba	Exploring the Transformation Morphology of Nitinol

ORAL SESSIONS

ORAL SESSION 1, 10:00 AM — 11:30 AM

STUDENT PRESENTER(S)	FACULTY MENTOR	PRESENTATION TITLE	LOCATION
Liam Claussen	Karen Wilson	Identifying cryptic crayfish species in Maine	Abromson Center 1 st floor, Hannaford Hall
Patricia Bishop Brian Determan Karen Wilson	Karen Wilson	Diet Composition and Niche Differentiation of Shad and Alewife in the Kennebec River	
Samantha Desaulniers	Karen Wilson	Linking Isotope Signatures to Habitat Use: A Study of Juvenile River Herring in the Kennebec River	
Samuel Davis	Mehrdaad Ghorashi	Design and Analysis of a Two-Stage Speed Reducer Gear Train	
Christine Knight	Dami Alegbeleye	Impacts of Education & Other Factors on the Leadership Pipeline in Maine	Abromson Center 1 st floor, Room 109
Gabrielle Perron	Dami Alegbeleye	From Boardroom to Broadband: A Leadership Revolution	
Lynn Corbett	Dami Alegbeleye	Improving Provider Well-Being Through Mentorship	
Michael Coppersmith	Dami Alegbeleye	Playing by the Rules: The Impact of Coaching Ethics on Player Performance	
Alice Greenleaf	Claire Morrow	Sex Differences in Expression of miR-128-3p: Implications for Bone Metabolism	Abromson Center 1 st floor, Room 110
Chloe Grant	Michaela Reagan	Investigating the In Vivo Effects of FABP5 Knockdown in Multiple Myeloma: Implications for Tumor Progression and Therapeutic Strategies	
Gage Whalen	Sergey Ryzhov	ROS Production Response to pH Changes in Immature Monocytes	
Samuel Rubin Brynn Rankin Phuong Le	Cliff Rosen	Free Fatty Acid Receptor 4 (FFA4) inhibition and osteoblast differentiation	
Caleb Gardner	Scott Eaton	Diesel Engine Performance Testing of Levulinate Ester Fuel Blends:	Abromson Center 2 nd floor, Room 213
Logan Butler	Scott Eaton	The Ocean Drifter Design Project	
Sean Cosgrove Sara Shea	Michael Davis	Supersonic Wind Tunnel Demonstrator	
Summer Carey	Scott Eaton	Ocean Drifter Buoys for Aquaculture	
Anna Sullivan	Ashley Towle	The Power of Support At Florence House: Why Funding Homeless Services and Housing First Sites Matters	Abromson Center 2 nd floor, Room 214
Elaina Hanselmann	Ashley Towle	Chocolate for Change: Addressing Youth Food Insecurity and Social Justice through Fundraising	
Martha Morrison	Ashley Towle	The Little Recognized Social Justice Issue of Unaffordable Prescription Medicines	
Samantha Aho	Ashley Towle	Shelf to Table: Using Library Services to Alleviate Food Insecurity and to Strengthen Community	

ORAL SESSIONS

ORAL SESSION 1, 10:00 AM — 11:30 PM *(continued)*

STUDENT PRESENTER(S)	FACULTY MENTOR	PRESENTATION TITLE	LOCATION
Alain Igiraneza	Jono Anzalone	The Changing Waters: Climate-Induced Migration of The Lake Tanganyika	Abromson Center 2 nd floor, Room 215
Ben Floyd	Jono Anzalone	Pakistan's Climate Migration Lessons From Pakistan's 2022: Flood & How Migration is Vulnerable to Climate Change	
Cody Harris	Rebecca Gibbons	The Fallout from Fallout: The Role of Video Games in Shaping Perspectives on Nuclear Weapons	
Katherine Asam	Francesca Vassallo	On the Contradictions Between Public and Government Support of the EU and Georgia	
Ashley McBreairty	Mackenzie McDonald	The Effects of Religious and Spiritual Ideology on Coping	Abromson Center 2 nd floor, Room 216
Christopher Parelus Joshua Richards Brenda Zollitsch	Brenda Zollitsch	Findings from a Qualitative Study on the Resilience-building Strategies and Needs of Twenty Southern and Midcoast Maine Organizations	
Finley Folkett	Sarah Lockridge	Navigating Métis Cultural Identity: Balancing Indigenous and European Heritage	
Jules Cooper	Michael Cauvel	Crime and Inequality: Material vs. Perception	

ORAL SESSION 2, 12:15 PM — 1:45 PM

STUDENT PRESENTER(S)	FACULTY MENTOR	PRESENTATION TITLE	LOCATION
Chayla Greenslet	Malinda Haslett	Gospel, the origin of the American tradition	Abromson Center 1 st floor, Hannaford Hall
Chiana Dawe	Daniel Sonenberg	The Creation of the <i>SCRATCH!</i> Musical Cast Album	
Harleigh Rose Boyce	Rachel Price-Cooper	The Echoes of the Past can Still be Heard in Entertainment Today	
Ocean Robbins	Mary Letellier	Trans Voices and Gender Affirming Art Songs	
Dianna Farrell	Firooza Pavri	Spatio-temporal vegetation patterns across UNESCO World Heritage Site Kujataa, Greenland using NASA MODIS (2000-2023)	Abromson Center 1 st floor, Room 109
Kelli Park	Firooza Pavri Tracy Michaud	Centering Indigenous Voices in Sustainable Development: Greenland (Kalaallit Nunaat) & Maine (Dawnland)	
Lisa Luken	Firooza Pavri	Perseverance and Adaptation in South Greenland Farming Communities	

ORAL SESSIONS

ORAL SESSION 2, 12:15 PM — 1:45 PM (*continued*)

STUDENT PRESENTER(S)	FACULTY MENTOR	PRESENTATION TITLE	LOCATION
Janelle Googins	Peter Woodruff	Synthesizing a Trehalose Analog for Cell Preservation	Abromson Center 1 st floor, Room 110
Katherine Knox	Michaela Reagan	Investigating the interaction of fatty acid binding proteins and high-fat diet in a murine myeloma model	
Parker Jalbert	Angus Koller	Instrumental Quantification and Analysis of Environmental Microplastics within Portland, Maine	
Patrick Duffy	Hank Tracy	Aggregation-Induced Emission in Derivatives of Silafluorene	
Abdimalik Maalim	Dami Alegbeleye	Leadership Dynamics in Higher Education: A Qualitative Exploration Through Bolman and Deal's Four-Frame Model	Abromson Center 2 nd floor, Room 213
Jennifer Major	Dami Alegbeleye	Impacts of Academic Advising on Student Leadership Skills	
Sydney Brown	Dami Alegbeleye	Stoicism and the Human Side of Leadership: Resilience Through Adversity	
Tanner McClure	Dami Alegbeleye	Impacts of Management Trainee Programs on Leadership Development	
Emilie Sanborn Richardson	Jono Anzalone	Public Health Response to Climate Change Induced Shortages	Abromson Center 2 nd floor, Room 214
Evelyn Spencer	Jono Anzalone	Climate Migrants: The Infrastructure Gap	
Madeleine Gray	Dan Jenkins	Developing a Followership Identity: A Grounded Theory	
Yoely Dominguez	Mackenzie McDonald	Race and Age Bias in Adoption	
Ty Bolduc	Julianne Siegfriedt	Queerness, Autism, and Intimacy: An Exploration of Intersecting Identities	Abromson Center 2 nd floor, Room 215
Fiona Charlson	Ashley Towle	Capturing Queerness – A Queer Art History	
Hannah Leitzell	Jessica Ouellette	The Functions of Gossip in Current Popular Media	
Ashley Salguero-Gonzalez	Douglas Currie	The Impact of Features on Eyeglasses	
Ian Mowatt	Joseph Staples	Climate-Driven Expansion of Ixodes scapularis: Future Habitat Projections	Abromson Center 2 nd floor, Room 216
Kylie Cloutier	Jono Anzalone	Thirst for Cash: How Capitalism Profits off Clean Water in the Age of Climate Crisis	
Landen Jorgensen	Luke Truman	Trash Talking: A Systematic Look at Portland Public Schools Waste	
Sage Tocci Brady Speed	Joseph Staples	Comparing tick density and ground-dwelling arthropod diversity in conifer and deciduous forest stands in Southern Maine	

ORAL SESSIONS

ORAL SESSION 3, 1:45 PM — 3:30 PM

STUDENT PRESENTER(S)	FACULTY MENTOR	PRESENTATION TITLE	LOCATION
Acacia Woodley	Ashley Towle	Bridging Barriers: Intersectional Support Systems for Non-Traditional Students at USM	Abromson Center 2 nd floor, Room 213
Devon Gatz	Ashley Towle	Impact of State-Level Lawmaking on Women's Rights	
Olivia Dufour	Ashley Towle	Leading Change Through Student Voter Engagement In Maine	
Theresa Fisk	Dami Alegbeleye	Cultivating a Vibrant Early Care and Education Workforce: Perspectives on Leaders and Mentors	
Daniel Fournier	David Champlin	CTHRC1 Receptor Identification	Abromson Center 2 nd floor, Room 214
Maria Rosales David Champlin	Robert Koza	Mesoderm specific transcript has a role in the systemic regulation of obesity.	
Ray Grika	Aaron Brown	Microcalorimetric Evaluation of Thermogenesis in Adipocytes across 2D and 3D Culture Systems	
Sarah Hassan Logan Douglas	David Champlin	How a high fat diet and different weight loss treatments impact thyroid metabolism within the brain	
Corbin Glover	Brandon Eberly	Simulating the Decay of Neutral Pions	Abromson Center 2 nd floor, Room 215
Mitchell Libby	Scott Eaton	Investigation into Catalytic Conversion of Automotive Emissions	
Peter Fitton	Brandon Eberly	Measurement of Pion Transparency in Electron-Nucleus Scattering	
Wade Jarvis	Scott Eaton	Development of Particle Image Velocimetry Methods for Fuel Spray Analysis	
Eli Wolf	Daniel Panici	Cnut Cyning's Advertisement to the English People	Abromson Center 2 nd floor, Room 216
Jared Vigue	Scott Wheatley	Bridging the Gap: Forging a Path for American Expats in Italy	
Nicole Merosola	Firooza Pavri Vinton Valentine	Monitoring Landscape Changes with Remotely Sensed data: K-means Classification of the Sebago Lake Watershed	
Trevor Cook	Ashley Towle	The USS Monitor: How Victory Shaped Design	

GRO FELLOWS

GRO FELLOWS, 3:00 PM — 4:30 PM

STUDENT PRESENTER(S)	FACULTY MENTOR	PRESENTATION NAME	LOCATION
Devon Grant	Meredith Madden	Inequities in the Rehabilitation Process of Musculoskeletal Injuries Throughout Southern Maine: How Much of Recovery is Determined by the Social Determinants of Health?	Abromson Center 1 st floor, Hannaford Hall
Joshua Mangin	Dan Jenkins	Describing the Symbolic Components of a Regional Comprehensive University's Research Culture: A Qualitative Descriptive Case Study	
Kelli Park	Caitlyn Madden Dorothea Ivey	Braided Rivers: Indigenous & Non-Indigenous Partnerships	
Lisa Luken	Elizabeth Goryunova	Exploring opportunities for developing a cross-cultural exchange program for North Atlantic wool entrepreneurs	
T Love Smith	Justin Tussing	Trans Poetics Archive	

Special thanks to:

The Office of Research Integrity and Outreach
The Maine Regulatory Training and Ethics Center
The Maine Economic Improvement Fund
The University of Southern Maine Foundation
The Thinking Matters Advisory Board Committee Members
Glickman Family Library
USM Conferences, Abromson Center
The students for their innovations
The mentors for their guidance
The reviewers and room monitors

Volunteers from:

- USM – School of Business
- USM – Department of Chemistry
- USM – Maine Economic Impact Funds
- USM – Department of Criminology
- USM – Department of Psychology
- USM – Leadership Studies
- USM – Department of Environmental Science and Policy
- USM – Department of Engineering
- USM – School of Social Work
- USM – Muskie School of Public Services
- USM – Department of Occupational Therapy
- USM – Teacher Education
- USM – School of Nursing
- Northeastern University - Roux Institute
- Southern Maine Community College- Biological Sciences



NOTES

