Welcome to the UNH Undergraduate Research Conference

FOR 22 YEARS, the URC has celebrated the innovative research that our undergraduate students pursue and the academic excellence that they achieve as they create solutions to real-world challenges. Guided by our renowned faculty mentors, our students also develop important life skills in problem solving, project management and teamwork — qualities that will serve them well as they graduate and pursue successful careers.

The URC’s online format adds a new dimension to the demanding research that our students’ presentations represent. In many ways, their work mirrors how businesses, institutions and societies are adapting to, and preparing for, a dynamic world that will increasingly function remotely and online after we emerge from the COVID-19 pandemic.

It is inspiring to know that close to 1,600 undergraduates have risen to the challenge for the 2021 URC. We encourage you to explore their engaging final projects and presentations, many of which represent years of hard work, inquiry and experimentation. Our URC students, along with the dedicated faculty and staff who support them, define the Wildcat community at its very best.

As you view the URC online, we think you will be as impressed and as proud as we are.

Thank you for visiting the virtual URC, and for supporting New Hampshire’s flagship public university.

Best regards,

James W. Dean Jr.
President

Wayne Jones
Provost and Vice President for Academic Affairs
Welcome to the 22nd annual celebration of academic excellence at the University of New Hampshire! The URC embodies UNH’s mission to offer students a discovery-based education by encouraging inquiry, exploration, and deeper immersion in their fields of study. Student presenters represent disciplines from across the academic spectrum, reflecting the breadth and depth of undergraduate research and scholarship at UNH.

At the Hamel Center for Undergraduate Research, our core mission is to provide resources and financial support for the research, scholarly, and creative projects of UNH students. Our additional role as the administrative home of the URC enables us to broaden our commitment to supporting and showcasing all stages of the research process – including the final stage of communicating research findings to the wider public. For many UNH students, the URC is their first opportunity to present their work to a broad audience. The URC is thus vital in giving students practice in public speaking, communicating complex ideas to a general audience, and developing a deeper understanding of their subject areas. Such experience prepares students to pursue graduate study and to establish and be successful in meaningful careers.

This year, of course, the global pandemic has brought challenges to our world, to our University, and to undergraduate research. Many student projects were delayed due to COVID-19 safety protocols; other projects had to be revised in order to be carried out safely; a few had to be suspended altogether. Despite these challenges, our students persevered. The following pages represent close to 1,600 undergraduate students who presented their research, scholarship, and creative work across more than twenty virtual URC events on the Durham and Manchester campuses. Thanks to the resourcefulness, creativity, and spirit of our UNH community, the virtual URC was a resounding success.

In addition to recognizing our students’ achievements, we also want to recognize the many members of the UNH community whose dedication and enthusiasm are critical to making the URC possible. You will find their names in the acknowledgements at the back of the book. The partnerships between – and shared investment of – students, faculty, staff, and administrators not only ensure the success of the URC but also demonstrate the strength of the UNH community. Thank you for joining us in celebrating our students’ remarkable scholarship!

Paul C. Tsang, Ph.D.
Director, Hamel Center for Undergraduate Research
Professor of Molecular, Cellular, and Biomedical Sciences

Molly Doyle, Ph.D.
Administrative Director, Hamel Center for Undergraduate Research

Amanda Leger, M.A.
URC Coordinator, Hamel Center for Undergraduate Research
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- Grimes Award Competition
- Honors English URC
- Psychology Department George M. Haslerud URC

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- Interdisciplinary Science and Engineering (ISE) Symposium

## Saturday, May 1 Events
- Paul College of Business and Economics First-Year Innovation and Research Experience (FIRE) URC

## Wednesday, May 5 Events
- Ann Manchester Kelley Nursing Inquiry Day

## Thursday, May 13 Events
- Paul College of Business and Economics
- Paul J. Holloway Prize Innovation to Market Competition (Championship Round)
- Languages, Literatures, & Cultures (LLC) Department URC

## Additional Features
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UNH Manchester Undergraduate Research Conference

Oral Presentations

Tuesday, April 20
The UNHM URC Oral Presentations feature formal scholarly presentations and/or multimedia presentations reflecting the students’ research interests.

Noor-Aldean Deek
Business
*Fresh Check Day - SLA*
Adviser: Keriann McDonough

Harshi Karedla
Neuropsychology
*A Guide to Personal Pronouns: Why and How to Use Them*
Adviser: Keriann McDonough

Brian Lundgren
History
*Wind of Change: Decolonization and Resistance in Singapore, South Africa, and Northern Ireland*
Adviser: Kristen Woytonik

Melissa Mullen
Analytics and Data Science

Jamila Peguero
Psychology
*Visibility Week: Student Leadership Academy Capstone*
Adviser: Keriann McDonough

Vishnu Soni
Neuropsychology
*Theorizing the Antithetical: Motion-Induced Blindness in a Static Image and Its Interaction with Optic Flow*
Adviser: John Sparrow

Megan Busby
History
*Reconstructing the Black Family: How the Freedman’s Bureau Sought to Shape Black Family Structures after Emancipation*
Adviser: Alexis Broderick

Matthew Castagna
History
*Disabled Civil War Veterans and the Struggle for Pensions*
Adviser: Marion Dorsey

Cole Christopher
History
*Italian American Mafia and Gun Control*
Adviser: Eliga Gould

Nicholas Fitzgerald
History, Political Science
*Contagious Opinion: How the Public Reacted to Three Disease Outbreaks in Southern New England*
Advisers: Kimberly Alexander, Elizabeth Mellyn, Cynthia Van Zandt

Maxwell Gilpatrick
History
*The Politics of the 2nd Amendment: How the 2nd Amendment Became Polarized*
Adviser: Eliga Gould

Norman Kerman
History
Adviser: Alexis Broderick

Tatyana Rossolimos-Kalogeropoulos
Justice Studies, Psychology
*Gun Reform and the Associated Political Contingency*
Adviser: Eliga Gould

Elinor Schelleng
Classics, History
*Perceptions of Masculinity from the Classical World to the Victorian Period*
Adviser: Michael Leese

Maiah Vorce
History
*Changing Representations of the Second World War: Why We Fight, Victory at Sea, and The World at War*
Adviser: Marion Dorsey

UNH Manchester Undergraduate Research Conference

Poster Presentations

Wednesday, April 21
The UNHM URC Poster Presentations showcase students’ independent research and internship projects, service learning activities, and civic engagement projects in the learning lab of the city of Manchester.

Robert Abbott
Homeland Security, International Affairs

Jonathan Kane

Corinne Prestia

Ana Toomey

Cameron Walsh

Homeland Security
*Harbor Homes*
Adviser: James Ramsay
Catherine Aborn
Biotechnology
Working in the UNH Manchester COVID Testing Lab
Adviser: Kristen Johnson

Maryam Ahmad
Biological Sciences, Neuropsychology
End of Life Care: An Internship at Brookhaven Hospice Facilities
Adviser: Nicholas Mian

Nicolette Barber
Neuropsychology

Abbey Olsen
Biochemistry, Molecular and Cellular Biology
The Sequencing of Halococcus dombrowskii and Sulfolobus shibatae
Adviser: Kyle MacLea

Kevin Barry
Jana Bushway
Jonathan Davis
Emili Judkins
Alex Materkowski
Forrest Vail
Homeland Security
Sean Jorgensen
Jacob Ricci
Homeland Security, Political Science
Homeland Security Capstone Presented by Student Security Professionals
Adviser: James Ramsay

Nicole Benoit
Matthew Haigis
Cara Joyce
Ryan Roberts
Elizabeth Scrima
Homeland Security
Elizabeth Manchester
Homeland Security, Justice Studies
Continuity of Operations Plan
Adviser: James Ramsay

Simren Bhogal
Dianne Moschitta
Biotechnology
FOXN2 Knockout in Mice and Human Cell Lines
Adviser: Kristen Johnson

Katelyn Blue
Brianna Turner
Biotechnology
Effect of Differing Sequential Order of Red and Blue Fluorescent Proteins in E. coli
Adviser: Kristen Johnson

Katelyn Blue
Biotechnology
Healthcare during a Pandemic: COVID-19 Testing Technician
Adviser: Kyle MacLea

Meghan Bolton
Public Service and Nonprofit Leadership
Transgender Policy and Rights in the U.S.
Adviser: Stephen Pimpare

Nemanja Boskovic
Biotechnology
Draft Genome Sequence of Dactylosporangium fulvum, Isolated from Soil
Adviser: Kyle MacLea

Nemanja Boskovic
Fidel Mkabela
Biotechnology
IPTG Induced Red Chromo Fluorescence
Adviser: Kristen Johnson

Jacob Brahm
Business
Labor Law and Union Membership in the United States
Adviser: Stephen Pimpare

Maggie Briggs
Biotechnology
Bacteriophage Collection from Exeter’s Natural Spring
Adviser: Kyle MacLea

Jacob Brown
Biotechnology
Fluorescent Protein Expression in Mammalian Cells
Adviser: Won Hyuk Suh

Jack Cavallaro
Regan Cullen
Natalie Noble
Matthew Sibley
Homeland Security
Kellee Gilcreast
Homeland Security, Justice Studies
HLS 790 Senior Capstone: Evergreen Woods Senior Living Facility
Adviser: James Ramsay

Katelyn Blue
Biotechnology

Samantha Chase
Biotechnology
Nela Klonowski
Biological Sciences
AHL Detection in Spoiled Milk
Adviser: Kristen Johnson

Samantha Chase
Biotechnology
Utilizing Heterotrophic Plate Counts to Determine Effectiveness of the Disinfection Process at Manchester Water Works
Adviser: Kyle MacLea

Hannah Chisholm
Kaelli Gehrung
Ethan Manning
Stavros Ouellette
Public Service and Nonprofit Leadership
HB172: Establishing Greenhouse Gas Emission Reduction Goals for the State and Establishing a Climate Action Plan
Adviser: Stephen Pimpare

Hannah Chisholm
Public Service and Nonprofit Leadership
National Bail Reform
Adviser: Stephen Pimpare

Michelle Cullen
Alex Gomez
Biotechnology
Forbidden Blue Juice: Investigating the Escherichia coli AI-2 Quorum-Sensing System Using an AmiCP Blue Chromoprotein
Adviser: Kristen Johnson

Laura Dailey
Psychology
Applied Behavior Analysis in New Hampshire
Adviser: Trish Merrill

Charlotte Dubois
Public Service and Nonprofit Leadership
Analyzing the Peoples Act of 2021 and Its History
Adviser: Stephen Pimpare
Charlotte Dubois
Public Service and Nonprofit Leadership

Katherine Heck
Politics and Society

Selma Jusufovic
Undeclared

Adviser: Stephen Pimpare

Charlotte Dubois
Public Service and Nonprofit Leadership

What Influence Remains within the Current Democratic Party from the Nixon Era?

Adviser: Stephen Pimpare

Hunter Dupuis
Lejla Hodzic

Biotechnology

Purple Sticky Bandits: Using Synthetic Biology to Engineer E.Coli to Express Red and Purple/Blue Chromoprotein

Adviser: Kristen Johnson

Eugenia Fedorov
Biology

Path to Becoming an Emergency Medical Technician

Adviser: Kyle MacLea

Trevor Flannery
Homeland Security

Genealogy Crime Solving vs. Privacy

Adviser: Stephen Pimpare

Nicole Gallien
Biotechnology

Bioluminescence in E. coli in Response to Arabinose

Adviser: Kristen Johnson

Nicole Gallien
Biotechnology

Cytotoxicity Evaluation of Synthetic Nanoparticles and Microparticles

Adviser: Won Hyuk Suh

Haley Garside
Biological Sciences

Naturopathic Medicine

Adviser: Kyle MacLea

Kaelli Gehrung
Public Service and Nonprofit Leadership

The Clean Air Act and Policy

Adviser: Stephen Pimpare

Jonathan Hying
Camryn Oliwa

Biotechnology

The Rainbow’s Backbone: Investigating the Use of Fluorescent and Chromoproteins as Signaling Agents for Gene Expression

Adviser: Kristen Johnson

Selma Jusufovic
Politics and Society

Corporate Law in Manchester

Adviser: Stephen Pimpare

Nela Klonowski
Biological Sciences

Antibiotic Discovery

Adviser: Suzanne Cooke

Lydia Kokx
Public Service and Nonprofit Leadership

How Has the USA Patriot Act Affected Racial Profiling in America?

Adviser: Stephen Pimpare

Hannah Lindh
Psychology

Child Poverty and the Need for Systemic Change

Adviser: Stephen Pimpare

Alyssa Lombardi
Biological Sciences

Effects of FOXN2 on Gene Expression

Levels of AKT2 and ROCK2 under Various Conditions

Adviser: Kristen Johnson

Zachary MacKenzie
Biotechnology

Isolation, Purification, and Analysis of a Bacteriophage

Adviser: Kyle MacLea

Ethan Manning
Public Service and Nonprofit Leadership

National Labor Policy: Policy Origins and Opportunities

Adviser: Stephen Pimpare

Ethan Manning
Public Service and Nonprofit Leadership

Right to Work, for Less?

Adviser: Stephen Pimpare
Naomi Marshall
Biological Sciences
Observation and Investigation in the Office of the Chief Medical Examiner Located in Concord, NH
Adviser: Suzanne Cooke

Sean McCormack-Kuhman
Homeland Security
The Correlation between Participating in Athletics at the University of New Hampshire and Post-Graduation Employment Rates and Job Advancement
Adviser: Stephen Pimpare

Spencer Mears
Biotechnology, Neuropsychology
Assessing Pain in Older Adults with Neurocognitive Decline
Adviser: Alison Paglia

Spencer Mears
Biotechnology, Neuropsychology
Monitoring Total Coliform Bacteria in the Lake Massabesic Watershed at Manchester Water Works
Adviser: Kyle MacLea

Raymond Miller
Biological Sciences
Novel Bacterial Genomic DNA Extraction Using DNAzol
Adviser: Suzanne Cooke

Fi Morano
Biological Sciences
Impact of Disease on Human Survivorship
Adviser: Kyle MacLea

Dianne Moschitta
Sydney Rollins
Biotechnology
Chroma coli: pH-Induced Color Changes in E. coli
Adviser: Kristen Johnson

Melissa Mullen
Analytics and Data Science
Using Generative Adversarial Networks to Identify Spectrum Disorders from Functional MRIs
Adviser: Jeremiah Johnson

Erica Ogert
Biological Sciences
Sequencing the Oggie Bacteriophage
Adviser: Kyle MacLea

Kenneth Paquette
Biotechnology
Phage Isolation from a Garden in Madbury
Adviser: Kyle MacLea

Tony Pion
Alexander Richards
Undeclared
HB220: Establishing Medical Freedom in Immunizations
Adviser: Stephen Pimpare

Aya Raouf
Biology
Patient Ambassador Internship
Adviser: Kyle MacLea

Mamady Sankoh
Biological Sciences
STEM Outreach via Zoom: Effectively Teaching Physiology to First and Second Graders Using Hands-On Activities
Adviser: Patricia Halpin

Holly Schoeller
Psychology
The Effects of Three-Dimensional Depth on Motion-Induced Blindness (MIB)
Adviser: John Sparrow

Rebecca Skahan
Neuropsychology
An Investigation of Mediation Analysis: Caregiver Trauma Affects Child Symptoms through Caregiver Symptomatology
Adviser: Nicholas Mian

Nicholas Spinosa
Biotechnology
Analysis of the Effect of FoxN2 on Pancreatic Cancer Cell Adhesion
Adviser: Kristen Johnson

Sirisha Srinivasan
Biotechnology
Encapsulation of Fluorescent Proteins in Polymer Microspheres
Adviser: Won Hyuk Suh

Sirisha Srinivasan
Biotechnology
Rafaela Tonne
Biological Sciences
UNHM COVID Lab: Using RT-LAMP Assay as a Screening Tool for SARS-COV-2
Adviser: Suzanne Cooke

Sadie Vezina
Biotechnology
Solution Squad: Potassium Sensor
Advisers: Kristen Johnson, Nicholas Rinella

Raunak Vijay
Biotechnology
Yard in Salem, NH
Adviser: Kyle MacLea

Michael Watson
Public Service and Nonprofit Leadership
Student Loan Debt
Adviser: Stephen Pimpare

Joli White
Biological Sciences
Internship at the Office of the Chief Medical Examiner
Adviser: Kyle MacLea

Jillian Wienzek
Biotechnology
Noninvasive Dentistry
Adviser: Patricia Halpin

Melissa Woodard
Biological Sciences
Genome Sequencing of Dermacoccus barathri/profundii
Adviser: Kyle MacLea
UNH Manchester URC Cinema Arts Day

Thursday, April 22
The UNHM Communication Arts program has a production track in which students complete introductory and advanced coursework in video production, scriptwriting, audio production, film aesthetics, and documentary production. The student films and scripts illustrate student work at different stages in the curriculum.

Jada Ferreira
Marketing
Waiting to Inhale
Adviser: Anthony Tenczar

Abigail Gendron
English Teaching
Identity: A Journey through Poetry and Film
Adviser: Barbara Jago

Elizabeth Langfeld
Communication Arts
ELUNIA - Borderlines (Music Video)
Adviser: Anthony Tenczar

Robert Skaff
Communication Arts
A Lullaby of Murder
Adviser: Anthony Tenczar

University-Wide Undergraduate Sustainability Research Symposium

Oral Presentations

Thursday, April 22
Students from all disciplines present research on a broad range of sustainability challenges — addressing environmental stewardship, social well-being, and economic vitality to meet our present needs, while ensuring the ability of future generations to meet their needs. Undergraduates doing sustainability research who present at this Symposium are automatically considered for the new UNH Sustainability Awards.

Stav Alkalay
Economics
Comcast: An Analysis of the Company’s Sustainability Practices
Adviser: Fiona Wilson

Janet Andrews
English
Yevgenia Men
Neuroscience and Behavior
Samuel Mercer
Chemical Engineering
Using Internet of Things Technology for a Sustainable Future
Adviser: Alexandra Contosta

Cole Bartlett
Economics, Sustainability
Katie Hoppler
Economics, English/Journalism
Emily Simkins
Neuroscience and Behavior
B Impact Clinic: Kikori
Adviser: Fiona Wilson

Cole Bartlett
Economics, Sustainability
Kelsea Batchelder
Kathryn Rascoe
Marketing, Sustainability
Jahmilha Crook
English, Sustainability
Sustainability Splash
Advisers: Kendall Gray, Fiona Wilson, Betty Woodman

Eric Berry
Kathryn Rascoe
Marketing, Sustainability
Deniz Kayhan
International Affairs, Political Science
Gabrielle Sott
International Business and Economics, Sustainability
B Impact Clinic: Dirigo Collective
Adviser: Erin Allgood

Alexis Bogart
Finance
Jordan Bohan
Ecogastronomy, Marketing
Kate Cone
Marketing, Sustainability
Shelly Lancaster
Wildlife and Conservation Biology
B Impact Clinic: Bristol Seafood
Adviser: Erin Allgood

Daisy Burns
Economics
Jill Durkin
Economics, Finance
Grace O’Connor
Finance
Benjamin Vath
Business Administration
B Impact Clinic: Prime Buchholz Team
Adviser: Fiona Wilson

Elizabeth Cain
Environmental Conservation and Sustainability
Fair Trade Certification of UNH Durham Campus
Adviser: Jennifer Andrews

Justine Cassel
Marine, Estuarine and Freshwater Biology, Sustainability
Santa Fe Naturals: An Analysis of the Company’s Sustainability Practices
Adviser: Fiona Wilson
Emily Chen  
Environmental Sciences

Madeline Strange  
Environmental Engineering

Emma Wick  
Philosophy, Sustainability

B Impact Clinic: L.L.Bean Student Consultants
Adviser: Fiona Wilson

Hallie Contois  
Communication, Sustainability

John Hurley  
Information Systems and Business Analytics, Sustainability

Sarah Kfoury  
Mathematics, Sustainability

Joseph Philbrick  
Biology, Sustainability

Steven Rizzo  
Environmental Engineering, Sustainability

Building a Flood-Resilient Kittery: Working Waterfront and Transportation Corridors
Advisers: Cameron Wake, Betty Woodman

Sarah Craft  
Undeclared

FedEx: An Analysis of the Company’s Sustainability Practices
Adviser: Fiona Wilson

Grady Dole  
Community and Environmental Planning, Sustainability

Samuel Hinkley  
Environmental and Resource Economics, Sustainability

Autumn Houle  
Social Work, Sustainability, Women’s and Gender Studies

Maxwell Schoenfeld  
 Anthropology, Sustainability

Colleen Spear  
Business Administration, Sustainability

Jack’s Pizza/Pittsfield Community Garden
Adviser: Devon Guyer

Matthew Dowling  
Marketing, Sustainability

Eleanor Hartmann  
Entrepreneurial Studies, Sustainability

Karyl Houghton  
Recreation Management and Policy, Sustainability

Autumn Scott  
Environmental and Resource Economics, Sustainability

Marketing the Sustainability Dual Major
Advisers: Cameron Wake, Betty Woodman

Alexis Eaton  
Environmental Engineering, Sustainability

Chloe Gross  
Environmental Conservation and Sustainability

Burt’s Bees: An Analysis of the Company’s Sustainability Practices
Adviser: Fiona Wilson

Stella Fairall  
Environmental Conservation and Sustainability, International Affairs

Scottish Marine Renewable Energy: U.S. Approaches for Development of Wave and Tidal Technologies
Adviser: Clayton Mitchell

Danielle Forte  
Communication, Sustainability

Grace Holler  
Nutrition, Sustainability

Edward Lange  
Analytical Economics

Sara Manzelli  
Sustainability, Zoology

Kaitlin Murphy  
Marketing, Sustainability

From Pandemic Responses to Sustainable Food Systems Solutions
Advisers: Erin Hale, Betty Woodman

Cole Fuller  
Analytical Economics, Educational Studies

Hershey & Co: An Analysis of the Company’s Sustainability Practices
Adviser: Fiona Wilson

Ben Gallahue  
Environmental and Resource Economics

Sam Kitfield-Vernon  
Environmental Conservation and Sustainability

B Impact Clinic: Good Start Packaging
Adviser: Erin Allgood

Luke Howard  
Political Science, Sustainability

Sydney Marshall  
Finance, Sustainability

Michael Pasciuto  
Mechanical Engineering, Sustainability

Taylor Rose  
Environmental and Resource Economics, Sustainability

Luke Zuchowski  
Environmental Engineering

UNH Woodlands and Agricultural Operations as Natural Climate Solutions
Advisers: John Gunn, Betty Woodman

Bailey Jones  
Environmental Engineering

How Switching to Electric Vehicles Could Reduce UNH’s Carbon and Nitrogen Footprints
Adviser: Jennifer Andrews

Brendan Kelly  
Business Administration

New Day Impact Investing: An Analysis of the Company’s Sustainability Practices
Adviser: Fiona Wilson

Caroline LeBlanc  
Analytical Economics

Anthem Blue Cross: An Analysis of the Company’s Sustainability Practices
Adviser: Fiona Wilson

Jack Martin  
Marketing, Sustainability

Mackenzie O’Rourke  
Analytical Economics, Sustainability

Erin Williams  
English, Sustainability

Elana Zabar  
Community and Environmental Planning, Sustainability

UNH Campus Sustainability Tour
Adviser: Cameron Wake
University-Wide Undergraduate Sustainability Research Symposium

Poster Presentations

**Thursday, April 22**

Students from all disciplines present research on a broad range of sustainability challenges—addressing environmental stewardship, social well-being, and economic vitality to meet our present needs, while ensuring the ability of future generations to meet their needs. Undergraduates doing sustainability research who present at this Symposium are automatically considered for the new UNH Sustainability Awards.

**Phoebe Adame**
Environmental Sciences, Sustainability  
**Trash 2 Treasure**  
Adviser: Jennifer Andrews

**Janet Andrews**
English  
**Yevgenia Men**
Neuroscience and Behavior

**Samuel Mercer**
Chemical Engineering  
**Using Internet of Things Technology for a Sustainable Future**  
Adviser: Alexandra Contosta

**Hannah Flaherty**
Biomedical Science  
**Streptomyces hygroscopicus in the Stellwagen Bank National Marine Sanctuary: Discovery of Biosynthetic Gene Clusters with Potential to Produce Chemotherapeutic Compounds**  
Advisers: Semra Aytur, John Bucci

**Jennifer Hargenrader**
Electrical Engineering  
**Are Electric Vehicles a Viable Solution for Energy Storage in a Microgrid?**  
Adviser: Cameron Wake

**Jessica Manning**
Environmental Engineering  
**University of New Hampshire’s Energy Plan**  
Adviser: Jennifer Andrews

**Connor Melican**
Earth Sciences  
**Analysis of Urban Heat Flux in Durham, NH**  
Adviser: Katharine Duderstadt

Philosophy Department Undergraduate Research Conference

**Thursday, April 22**

The Philosophy URC is a mosaic of concise and meaningful student presentations, varying from such philosophical topics as applied ethics, language theory, and social justice. Standard presentations predominantly last fifteen minutes and are subsequently followed by a brief Q & A period.

**Caroline Gibson**
Philosophy, Political Science  
**Care Ethics, Disability, and Public Policy**  
Advisers: Tama Andrews, Charlotte Witt

**Liliana Mangan**
Philosophy  
**Elaborative Learning Thesis**  
Adviser: Willem deVries

**Ely Marciano**
Philosophy  
**The Self: Real or Illusory**  
Adviser: Timm Triplett

**Parker Stewart**
Philosophy  
**Hegel and Marx: A Shared Commitment to Humanity**  
Adviser: Willem deVries

**Gordon Unzen**
Justice Studies, Philosophy, Psychology  
**Artificially Intelligent Global Governance**  
Adviser: Nicholas Smith
All Colleges Undergraduate Research Symposium

Oral Presentations

Friday, April 23
The All Colleges Undergraduate Research Symposium showcases students from a variety of disciplines from across the colleges, including the liberal arts, social sciences, health and human services, business and economics, and biological and physical sciences. Students present their faculty-mentored projects as a poster or oral presentation.

Robert Abbott
Homeland Security, International Affairs
Lack of Identity in U.S.-German Relations in the 21st Century
Adviser: Smita Lahiri

Lina Adjout
International Affairs, Political Science
Algeria’s Economic Paralysis and Its Impact on Migration
Adviser: Thomas Safford

Favour Alejo
Biomedical Science
An Immigrant Woman Haunted by Her Authoritarian Homeland and Host Country
Adviser: William Woodward

Kiarra Austin
Political Science
Chinese Censorship on the Internet
Adviser: Lawrence Reardon

Jamie Azulay
Communication
Breaking News: Journalism Is at the Brink of Extinction
Adviser: Michael Soha

Mia Brikaatis
Educational Studies, English Teaching

Aleigha Raymond
Educational Studies, English
UNH Write Free: How Can We Motivate Students Online to Write?
Adviser: Barbara Peterson

Sabrina Brown
English
Examining Sustainable Libraries
Adviser: Molly Campbell

Julia Bushell
Communication Sciences and Disorders
Effects of Pitch Perturbation on Vocal Learning
Adviser: Donald Robin

Olivia Cadieux
International Affairs, Sociology
How Is Italy’s Aging Population Impacting Their Social and Economic Conditions?
Adviser: Thomas Safford

Marina Cardoso Vianna Vaz
International Affairs, Political Science
Using HIV/AIDS-Specific Foreign Aid to Build up National Health System Capacity: Lessons from Brazil and Nigeria
Adviser: Smita Lahiri

Emmalyn Casteris
Linguistics, Women’s and Gender Studies
A Look into the Lived Experience of Food-Insecure College Students and Accessibility of Student Resources
Adviser: Siobhan Senier

Andrew Cavanagh
Economics
North Korea Funding of Their Nuclear Program
Adviser: Lawrence Reardon

Mariaisabel Cedeno
American Sign Language (ASL)/English Interpreting, Psychology
Cultural Variations in Children’s Involvement in Household Work
Adviser: Pablo Chavajay
Connor Chamberlin  
Communication, Political Science  
China’s International Relations and Climate Change  
Adviser: Lawrence Reardon

Connor Chamberlin  
Communication, Political Science  
U.S. Religious Groups and Their Impact on Diplomatic Relations with the Holy See  
Adviser: Lawrence Reardon

Laura Clancy  
Justice Studies, Sociology  
American Identity and the Middle East  
Adviser: Catherine Moran

Abbey Coe  
Geography, International Affairs  
Monetizing and Marxizing Queerness: China’s Part in Rainbow Capitalism  
Adviser: Thomas Safford

Jake Connolly  
Communication  
Apologetic Discourse in Sexual Allegation Scandals  
Adviser: Lawrence Prelli

Maya Coykendall  
Social Work  
Before and After the #MeToo Movement: Investigating How the Media Discusses Male-Perpetrated Sexual Harassment  
Adviser: Jennifer O’Brien

Kelsey Crowley  
Political Science  
Trends in Global Migration  
Adviser: Alynna Lyon

Brayden Danforth  
English  
Developing Sustainability Website  
Adviser: Molly Campbell

Zoe Dawson  
Communication, International Affairs  
Adviser: Smita Lahiri

Sarah Desimone  
Communication, Political Science  
LGBTQ+ Representation in “Friends”  
Adviser: Joseph Terry

Emily Desormier  
Communication, English Literature  
Charlotte Stansbury  
Communication  
Prevention Innovations Research Center Intern Project: Best Practices in Social Media Engagement and Measurement for Research Centers  
Adviser: Lawrence Reardon

Ben Desrochers  
Political Science  
The Infinite War: Why States Play Different Levels of the Realist Game  
Adviser: Lawrence Reardon

Althea Devereux  
Nursing  
Evaluating the Relationship between Trust and Anxiety during the COVID-19 Pandemic  
Adviser: Kristen Clark

Kaylyn Dickinson  
Psychology  
Sofia Lombardo  
Justice Studies, Psychology  
Danielle Tremblay  
Neuroscience and Behavior  
Demonstrating Four Pathways of Stereopsis through Spatial Frequency Curves  
Advisers: Andrew Kitt, William Stine

Kristina Dileo  
Human Development and Family Studies  
The Role of Peer Support Groups in Coping with the Reproductive Challenges Associated with Polycystic Ovarian Syndrome  
Adviser: Erin Sharp

Evan Edmonds  
English/Journalism  
College Students Hold the Keys to Cultivating Civility  
Adviser: Lydia Reinig

Evan England  
Sociology  
Environmental Ableism: Who Are Environmentalist Best Practices Best For?  
Adviser: Thomas Safford

Stella Fairall  
Environmental Conservation and Sustainability, International Affairs  
Celtic Heritage Tourism: Sustainability and Identity  
Adviser: Thomas Safford

Faith Farnham  
Nursing  
Health Needs and Accessibility of Syringe Service Programs (SSPs) and Healthcare and Support Services in Manchester  
Adviser: Kerry Nolte

Emma Fraser  
International Affairs, Sustainable Agriculture and Food Systems  
The Issues of Population Decline and Demographic Shifts within Japan  
Adviser: Thomas Safford

Shaelyn Frost  
French, International Affairs  
Adviser: Smita Lahiri

Reilly Gilmour  
Nursing  
A Comparison of Health Habits between Nursing and Non-Nursing Majors  
Advisers: Eileen Hollis, Kerry Nolte

Alexis Goldstein  
Occupational Therapy  
Website Research and Design  
Adviser: Molly Campbell

Madeline Graf  
Communication  
Using the Practice ‘Legit’  
Adviser: Edward Reynolds

Zander Guldbrandsen  
Geography  
Territorial Disputes in the South China Sea: Brunei and China  
Adviser: Lawrence Reardon

Jared Gustafson  
Communication  
Prevention Innovations Research Center Intern Project: Sexual Violence and Harassment in Sports  
Adviser: Jane Stapleton
Audrey Hettinger  
International Affairs, Political Science  
Protesting in the Age of Technology  
Adviser: Smita Lahiri

Rebecca Holland  
Anthropology  
Historical Garment Reconstruction and Recreation  
Adviser: Amy Michael

Sophia Hughes  
Marketing, Sociology  
A Look at the Gender Hierarchy among Cultures  
Adviser: Tamsin Whitehead

William Johnson  
Communication, Political Science  
Political Cooperation after Longstanding Animus: Historical Analysis  
Adviser: Lawrence Reardon

Avery Judd  
International Affairs, Political Science  
A Comparative Study of Governmental Systems in the Maghreb: Tunisia, Algeria, and Morocco  
Adviser: Smita Lahiri

Brianna Judkins  
Nursing  
Nurses’ Perceptions of Caring for Patients in the Prone Position  
Adviser: Clarissa Michalak

Philip Kaifer  
Political Science  
Emigration from Central America  
Adviser: Lawrence Reardon

Isabelle Kaphoian  
Economics  
The Present Azerbaijani Threat to Ethnic Armenian Cultural Heritage Following the 2020 Nagorno-Karabakh War  
Adviser: Nicole Ruane

Deniz Kayhan  
International Affairs, Political Science  
The Future of Artificial Intelligence and Global Governance  
Adviser: Thomas Safford

Julian Maduro  
English  
The Evolution of Assigned Reading: Diversity in New Hampshire High School Reading and Student Reading Engagement  
Adviser: Laura Smith

Noah Malo  
Political Science  
Refugees and Forced Migrants: The Syrian Refugee Crisis  
Adviser: Lawrence Reardon

Brooke Marston  
Communication  
Campaigning with the Stars: The Emerging Intersection between Fandom and Politics  
Adviser: Michael Soha

Brooke Marston  
Communication  
Uses Unaddressed: How Social Technologies Tacitly Allow Acts of Gender-Based Violence  
Adviser: Nora Draper

Delaney McKee  
Psychology  
Adviser: Elizabeth Caldwell

Caelin McMahon  
Anthropology, Spanish  
Language Use in Puerto Rican Literary Journals  
Adviser: Casey Golomski

Alexa McNamara  
Communication  
Art Spaces as Places for Everyday Political Talk  
Adviser: Lydia Reinig

Kelsey Mercurio  
Biochemistry, Molecular and Cellular Biology, Sustainable Agriculture and Food Systems  
Roles of Non-Frankia Bacteria in Root Nodule Formation and Function in Alnus glutinosa  
Adviser: Louis Tisa
Pari Moghadam
French, International Affairs
Sociological Changes in China during the Transition to Communist Party Rule
Adviser: Thomas Safford

Megan Molinari
Marine, Estuarine and Freshwater Biology, Neuroscience and Behavior
Mary Munley
Marine, Estuarine and Freshwater Biology
Evaluating Alternative Bait Ingredients for the Channeled Whelk Fishery
Adviser: Elizabeth Fairchild

Emily Moor
Biomedical Science
Exploring the Effects of Concussion on Pediatric Health-Related Quality of Life
Adviser: Patricia Kelshaw

Curtis Newton
International Affairs, Political Science
Second Language Acquisition (SLA) and the Ousting of Russian in the Baltic States
Adviser: Thomas Safford

Aislinn Noble
Political Science
Constitutional Manipulation and the Exploitation of the People
Adviser: Lawrence Reardon

Gwynevere Norris
International Affairs, Linguistics
German beyond the Gender Binary
Adviser: Thomas Safford

Tannah O’Brien
Nursing
Fluid Resuscitation and Sustaining Practice Change in the Pediatric Setting
Adviser: Kerry Nolte

Justice Ohanasian
Social Work, Spanish
Analyzing the Perceived Barriers to Reporting Sexual Violence among College Students
Adviser: Tarkington Newman

Annelise Papinsick
Humanities, Music
Virginia Walsh
Humanities, Psychology
Forgotten History of Women at UNH: The Citizenship School
Adviser: Nicole Ruane

Yongyao Peng
International Affairs, Political Science
China’s Effort to Build Soft Power: The Confucius Institutes
Adviser: Smita Lahiri

Yongyao Peng
International Affairs, Political Science
The Making of a Superpower: The Recent Development of China’s Military
Adviser: Lawrence Reardon

Shane Pimental
International Affairs, Political Science
The Iran Nuclear Dilemma
Adviser: Lawrence Reardon

Elizabeth Rebuck
Psychology
A Tale of Two Cities: An Analysis of the U.S. COVID-19 Response
Adviser: Elizabeth Caldwell

Chloe Richard
Biomedical Science
A Survey of Opportunistic Fungi in the Portsmouth, NH Region
Adviser: Juan Rojo

Michael Roderick
Political Science
China’s Reluctance to Lead on Global Climate Change
Adviser: Lawrence Reardon

Sawyer Rogers
History, Political Science
Nationalism and the Disputed East China Sea
Adviser: Lawrence Reardon

Liam Ross
Political Science
Rolling Back Communism: U.S. Involvement in the Korean War
Adviser: Lawrence Reardon

Stephanie Rouse
Communication, International Affairs
A Basic Right: Nigeria’s Search for Clean Water
Adviser: Smita Lahiri

Fanny Cathrine Sanderberg
International Affairs, Sociology
Norway’s Black Gold: A Case Study of Oil Development and Its Environmental Impact
Adviser: Thomas Safford

Kaja Marie Midtskog Sandsten
English, International Affairs
The Rise of Anti-Immigrant and Nationalist Sentiments in France and the United Kingdom
Adviser: Thomas Safford

Mitchell Scacchi
Political Science
The Role of the President of the United States in Interpreting the U.S. Constitution
Adviser: Susan Siggelakis

Antonia Schmitz
Psychology
Adviser: Elizabeth Caldwell

Kaitlyn Seamans
Occupational Therapy
Influence of Sign Language on Undesirable Behaviors of a Child with Developmental Delay: Single-Case Experimental Design
Adviser: Lou Ann Griswold

Nikita Serdiuk
English
Researching the Reasons for Worldwide Rise of Modern Nationalism
Adviser: Molly Campbell

Colin Small
Computer Science
MMS SITL Ground Loop: Automating Spacecraft Data Selection
Advisers: Matthew Argall, Marek Petrik

Allyson Smith
Political Science, Women’s and Gender Studies
Women’s Rights in China
Adviser: Lawrence Reardon
Denali Smith  
International Affairs, Linguistics  
Typological Analysis of the Languages in Mainland China  
Adviser: Thomas Safford

Madison Smith  
Communication Sciences and Disorders  
Theory and Neural Bases of Childhood Apraxia of Speech and Apraxia of Speech  
Adviser: Donald Robin

Raymond Staples  
Business Administration, Political Science  
China’s Solar Power Renewable Energy  
Adviser: Lawrence Reardon

Hayden Stinson  
Linguistics, Spanish  
Gay Male Speech and Regional Dialects in Motion: Constructing Linguistic Identity in Southern New Hampshire  
Adviser: Rachel Burdin

Violet Sullivan  
Kinesiology  
Running History and Injury Status in Female Current and Former Division 1 Distance Runners during the COVID-19 Pandemic  
Adviser: Summer Cook

Jinyang Sun  
Political Science  
Analysis of Sino-U.S. Ideological Relationship  
Adviser: Lawrence Reardon

Jennifer Suwu  
Political Science  
Preventing the Tyranny of the Commons: South China Sea  
Adviser: Lawrence Reardon

Charles Swift  
Communication  
Chinese Perceptions of North Korea  
Adviser: Lawrence Reardon

Anthony Tamagnini  
Political Science  
Modern Genocide: Why Nations Are Addressing China’s Treatment of the Uyghurs  
Adviser: Lawrence Reardon

Emily Tomasi  
International Affairs, Political Science  
A Changing Political System: Democratic Backsliding and Its Effects on Human Rights in Hungary  
Adviser: Thomas Safford

Emily Tomasi  
International Affairs, Political Science  
A Global Audience: China’s Relationship with the American Film Industry  
Adviser: Lawrence Reardon

Arianna True  
Biomedical Science  
Developing Healthcare Inequalities Website  
Adviser: Molly Campbell

Ronelle Tshiela  
Political Science  
Sino-Vatican Relations and the Separation of Church and State  
Adviser: Lawrence Reardon

Emma Watts  
Sociology  
Color-Blind Racism at the University of New Hampshire  
Adviser: Rebecca Glauber

Emma Watts  
Sociology  
Critical Race Analysis of the American Dream  
Adviser: Ryan Gibson

Emma Watts  
Sociology  
Prison Conditions and Mental Health: An Analysis of American Incarceration  
Adviser: Ryan Gibson

Chiara Antonioli  
Biomedical Science  
Anticoagulant Rodenticide, Canine Distemper Virus, and Necropsy Findings in Fisher, Gray Fox, and Red Fox from NH  
Adviser: David Needle

Ian Ayer  
Biomedical Science  
Regulation of Fibroblast Growth Factor 2 (FGF2) and Cellular Communication Network Factor 1 (CCN1) by Thyroid Hormone in the Mid-Cycle Bovine Corpus Luteum  
Adviser: Paul Tsang

Emily Baker  
Anthropology  
Adviser: Svetlana Peshkova

Nicolette Barber  
Neuropsychology  
Brigid Ramsden  
Psychology  
Neurological Changes Caused by COVID-19  
Adviser: Elizabeth Caldwell
Kyana Burgess  
Anthropology, Sustainability  

Victoria Slight  
Anthropology, Justice Studies  
Constructing an Osteobiography: A Biological Profile and Historical Custody Investigation  
Adviser: Amy Michael

Matthew Castagna  
History  
Examining the Status of Physical Education for Students with Disabilities in the State of New Hampshire  
Adviser: Michelle Grenier

Anna Ciolfi  
Health Sciences  
The Effect of Acute Aerobic Exercise on Memory in Young Adults  
Adviser: Ronald Croce

Laura Clancy  
Justice Studies, Sociology  
Coastal Elitism  
Adviser: Kenneth Johnson

Kyle Deegan  
Neuroscience and Behavior  
The Role of Ventral Medial Thalamus in Spatial Working Memory  
Advisers: Brett Gibson, Robert Mair

Victoria Dobrzycki  
Health Management and Policy  
Associations of Opioid/Prescription Drug Misuse with Suicidal Ideation, Bullying, and Dietary Factors among U.S. High School Students  
Adviser: Semra Aytur

Brittany Dunkle  
Anthropology, Justice Studies  
COVID-19’s Impact on the Human Trafficking Industry: A Case Study in New Hampshire  
Adviser: Casey Golomski

Kathryn Dwyer  
Social Work, Women’s and Gender Studies  
An Ecological Perspective of Inclusive LGBTQ+ Athletic Climates: A Multi-Methods Study  
Adviser: Tarkington Newman

Alexandra Ecker  
Neuroscience and Behavior  
Elizabeth Rebuck  
Psychology  
Defining Subjective Features of Spontaneous Thought Using Retrospective Recall  
Advisers: Caitlin Mills, Cati Poulos

Hannah Flaherty  
Biomedical Science  
Streptomyces hygroscopicus in the Stellwagen Bank National Marine Sanctuary: Discovery of Biosynthetic Gene Clusters with Potential to Produce Chemotherapeutic Compounds  
Advisers: Semra Aytur, John Bucci

Emma Fuini  
Social Work  
Transgender Healthcare Services Provided by a Sample of Independent Abortion Clinics  
Adviser: Will Lusenhop

Alyssa Greig  
Biomedical Science  
Comparative in silico Analysis of Bromodomain-Containing Regulatory Complexes in Apicomplexan Parasites  
Adviser: Vicki Jeffers

Olivia Henriques  
Biochemistry, Molecular and Cellular Biology  
A Comparison of Online and Face-to-Face PLTL in Chemistry Courses: Student Outcomes and Leader Perspectives  
Adviser: Christopher Bauer

Donnelly Hutchings  
Biochemistry, Molecular and Cellular Biology  
Do the Phytoestrogens Daidzein and Equol Impact the Expression of Cellular Communication Network Factor 1 (CCNI) and Vascular Endothelial Growth Factor A (VEGFA) in the Young Bovine Corpus Luteum (CL)?  
Adviser: Paul Tsang

Samuel Kierstead  
Michael Piessens  
Mechanical Engineering  
Power-Assisted Hand Cycle for People with Physical Disabilities  
Adviser: Ivaylo Nedyalkov

Hailey Kirchner  
Neuroscience and Behavior  
Examining the Status of Physical Education for Students with Disabilities in the State of New Hampshire  
Adviser: Michelle Grenier

Jacqueline Klombers  
Biology  
Joseph Ledan  
Marine, Estuarine and Freshwater Biology  
Examining Behavior of Lumpfish, Cyclopterus lumpus, under Differing Light Levels  
Advisers: Michael Doherty, Elizabeth Fairchild

Sean Kohlbrenner  
Computer Science  
Language of Learning Lab: Educational Data Mining  
Adviser: Laura Allen

Sierra Kruser  
Neuroscience and Behavior  
Changes in Alpha Oscillations in an Executive Function Task in Parkinson’s Patients  
Adviser: Robert Ross

Sonthaya Lacy  
Neuroscience and Behavior, Spanish  
Congruency Effects on Testing  
Adviser: Caitlin Mills

Abigail Laverriere  
Tara Willette  
Nutrition  
Weight and Body Composition Fluctuations among Male Collegiate Athletes across Multiple Seasons  
Adviser: Kevin Pietro

Grayson Leichtman  
Occupational Therapy  
An Updated Exploration of the PSS-C: Investigating Current Global Scores and a New Local Sample  
Adviser: Barbara White

Aislinn Low  
Neuroscience and Behavior  
Relationship between Personal Intelligence and Motivation  
Advisers: Hannah Lightcap, John Mayer
Laura Lynch
Nutrition
*Exploring COVID-19 Effects on Level of Food Insecurity among College Students*
Adviser: Jesse Morrell

Jessica Manning
Environmental Engineering
*Ice Modeling Capabilities for Improved Response to Arctic Maritime Spills*
Adviser: Nancy Kinner

Juliana Mastan
Neuroscience and Behavior
*Activation Likelihood Estimation of Deception-Related Brain Regions*
Advisers: Sarah Meier, Donald Robin

Grace McGrew
Neuroscience and Behavior
*Interoceptive Association of Nicotine as Stimulus*
Adviser: Sergios Charntikov

Kelsey Mercurio
Biochemistry, Molecular and Cellular Biology, Sustainable Agriculture and Food Systems
*Roles of Non-Frankia Bacteria in Root Nodule Formation and Function in Alnus glutinosa*
Adviser: Louis Tisa

Ashlyn Murphy
Communication Sciences and Disorders
*The Impact of Child-Directed Speech during Parent-Child Interactions in a Museum*
Adviser: Jill Thorson

Meegan O
Justice Studies, Social Work
*Discrimination, Does One Shoe Fit All? Exploring the Relationship between Sexism and Racism*
Adviser: Ellen Cohn

Grace O’Halloran
Communication Sciences and Disorders
*Prosodic and Phonetic Analyses of Adult Male and Female Puerto Rican Spanish Speakers*
Adviser: Jill Thorson

Julia Paquette
Biomedical Science
*Factor Fiction? Identifying a Putative Toxoplasma gondii Transcriptional Complex*
Adviser: Vicki Jeffers

Carli Rita
Occupational Therapy
*The Efficacy of the Healthy Families Flourish Program for Families Raising Children with Autism*
Adviser: Sarah Smith

Nicole Sarette
Sociology
*The Effect of Socioeconomic Status on Students’ Attitudes toward Student Debt*
Adviser: Benjamin Brown

Kelly Schnell
Social Work
*Trends in Use of Restraint Rates in Inpatient Psychiatric Facilities across U.S. from 2017-2020*
Adviser: Kathryn Brewer

Brandon Smith
Biomedical Science
*Resting State Effective Connectivity Differences between High Ruminators and Low Ruminators*
Adviser: Robert Ross

Emily Soule
Economics, Political Science
*Uruguay’s Bold Experiment: Assessing the Impact of Marijuana Decriminalization*
Adviser: Mary Malone

Tyler Stetson
Neuroscience and Behavior
*A Computational Approach to Understanding Computer-Mediated Health Conversations*
Adviser: Caitlin Mills

Gordon Unzen
Justice Studies, Philosophy, Psychology

Rachel Young
Justice Studies, Psychology, Women’s and Gender Studies
*An Intersectional Feminist Analysis of Contemporary NH Drug Policies*
Adviser: Robin Hackett

**Peter T. Paul College of Business and Economics Undergraduate Research Conference**

**Oral Session I**

**Friday, April 23**

Through original research and valuable guidance from mentors, this event helps Paul College students gain deeper academic knowledge as well as professional experience. This URG event includes poster presentations, oral presentations, and feedback from judges.

**Marketing Workshop Presentations**

Adviser: Peter Masucci

Ryan Abarzua
Finance, Marketing

John Cadagan
Sage Gallagher
Samuel Lupinacci
Samantha Prial
Caroline Wheatley

Health Management and Policy, Marketing

Paul College MS Accounting: Design and Develop Marketing Programs Aimed at Increasing Awareness of and Applications to This Professional Master’s Degree Program
Benjamin Albanese  
Finance, Marketing  
Travis Campbell  
Marketing  
Megan Champagne  
Marketing, Spanish  
Jack Martin  
Marketing, Sustainability  
Owen Novak  
Entrepreneurial Studies, Marketing  
Nashua International Sculpture Symposium: Design and Develop Marketing Programs Aimed at Increasing Awareness of and Participation in This Nashua, NH-Based, Non-Profit Arts Organization

Robert Andreasse  
Finance, Marketing  
Mikayla Ferguson  
Rachael Muise  
Management, Marketing  
Gianna Filaretos  
Molly Finn  
Marketing  
Christian Redding  
Entrepreneurial Studies, Marketing  
ClarityHLTH: Research and Develop Marketing Programs Aimed at Generating Awareness for This Manchester, NH, Healthcare Technology Start-Up Company

Zachary Bahai  
William Mauer  
Cara Sullivan  
Isabelle Todd  
Marketing  
Marisa Labadini  
Entrepreneurial Studies, Marketing  
James Wichert  
Communication, Marketing  
Women’s Wellness Exchange: Research, Design, and Develop Marketing Programs Aimed at Generating Awareness for This Portsmouth, NH, Women’s Health Focused Start-Up Company

Kelsea Batchelder  
Marketing, Sustainability  
Peter Donohoe  
Alexander Stodol ski  
Meghan Sweat  
Marketing  
Juliana Mancinelli  
Finance, Marketing  
Zachary Merian  
Marketing, Theatre  
Indonesian Community Connect: Design and Develop Marketing Programs to Aid in the Introduction of “Little Indonesia” by This Non-Profit Cultural Organization in Somersworth, NH

Aimee Bayer  
Morgan Houk  
Kyle Spellacy  
Marketing  
Anthony D’Angelo  
Finance, Marketing  
Patrick Flaherty  
Kelly Nguyen  
Management, Marketing  
Our Place NH: Research and Develop Marketing Programs Aimed at Increasing Awareness of and Donations to This Non-Profit Organization Providing Housing for Developmentally Disabled People

William Bazemore  
Johanna McCarthy  
Maxwell Shelley  
Janessa Terry  
Marketing  
Sara Greenwald  
Michael Rametta  
Management, Marketing  
Locally Handmade: Design and Develop Marketing Programs Aimed at Increasing Awareness of and Growing Sales for This Salem, NH-based, Woman-Owned Small Retail Business

Cecilia Beaudoin  
Johanna Rewucki  
Michael Robinson  
Marketing  
Hannah Carroll  
Information Systems and Business Analytics, Marketing  
Melissa Dingle  
Kinesiology, Marketing  
Patrick Flynn  
Finance, Marketing  
Health & Wellness: Design and Develop Marketing Programs Aimed at Increasing Awareness of the Many Programs Offered to Support Students at UNH during the COVID-19 Pandemic

William Beaulieu  
Victor Langone  
Tyler Martin  
Margaret Moss  
Marketing  
Kyle Norris  
Finance, Marketing  
ecoText: Research, Design, and Develop Marketing Programs Aimed at Increasing Awareness of and Generating Sales Leads for This Dover, NH, Online Educational Materials Start-Up Company

Jack Bouchard  
Thomas Modelevsky  
Daniel Romagna  
Isabella Ronson  
Marketing  
Courtney Fahey  
Hospitality Management, Marketing  
Jessica Hanley  
Environmental Conservation and Sustainability, Marketing  
Reveal Yoga: Design and Develop Marketing Programs to Grow Awareness of and Increase Business for This Bethlehem, NH, Woman-Owned Start-Up Company
Alex Cabana  
Taylor Crane  
Finance, Marketing  
Connor Jesson  
Management, Marketing  
Skylar O’Reilly  
Jacob Penttinen  
Nathan Whitcomb  
Marketing  
Measured Air Performance: Design and Develop Marketing Programs Aimed at Increasing Awareness of and Sales Leads for This Manchester, NH, Technology Company  

Jacob Callahan  
Caroline Murphy  
Jessica Silvagni  
Marketing  
Jeffrey Cole  
Information Systems and Business Analytics, Marketing  
Lindsey McGinnis  
Management, Marketing  
Advance Life Skills: Design and Develop Marketing Programs Aimed at Increasing Awareness of and Sales for This Bedford, NH, Educational Products Small Business  

Hannah Cehovsky  
Olivia Fusegni  
Nikolos Raftopoulos  
Marketing  
Lauren Chandler  
Hospitality Management, Marketing  
Henry Garvey  
Catherine Molla  
Management, Marketing  
Riverview Farm on the Winnipesaukee: Research, Design, and Develop Marketing Programs to Help Launch and Grow Awareness for This New Sustainable Farming Start-Up Company  

Koca Chan  
Information Systems and Business Analytics, Marketing  
Courtney Foote  
Christopher Muollo  
Victoria Tully  
Marketing  
Steven McKeen  
Economics, Marketing  
Dover Flexo Electronics: Design and Develop Marketing Programs Aimed at Growing Awareness of and Attracting New Customers for This Rochester, NH, Manufacturing Company  

Isabel Cieslar  
Marketing, Nutrition  
Kiera Connell  
Olivia Glick  
James LeVie  
Management, Marketing  
Brendan Glock  
Cassaudra Kalba  
Marketing  
Seacoast Community Radio, WXGR-LP FM: Research and Develop Marketing Programs Aimed at Increasing Awareness of and Adding Listeners to This Portsmouth, NH-Based, Alternative Music Radio Station  

Andrew Connolly  
Entrepreneurial Studies, Marketing  
Kaitlyn Keane  
Victor Li  
Gabrielle Marrocco  
Marketing  
Emma O’Neill  
Management, Marketing  
Nuttin Ordinary: Research, Design, and Develop Marketing Programs Aimed at Increasing Awareness of and Growing Sales for This Peterborough, NH-Based, Plant-Based Cheese Company  

Kayla Coppola  
Thomas McCormick  
Marketing  
Brian Kofman  
Marketing, Psychology  
Allison Scimone  
Management, Marketing  
Danielle Szwedski  
Finance, Marketing  
Food Providers Network: Research and Develop Marketing Programs Aimed at Increasing Awareness of and Participation in This NH-Based Food Distribution Non-Profit Organization  

Kelly Crawford  
Finance, Marketing  
Drew Delano  
Patrick Gavin  
Rachel Hall  
Paige Kauhl  
Charles Kelleher  
Marketing  
Dover Physical Therapy: Research and Develop Marketing Programs Aimed at Growing Business for This Local Physical Therapy Company  

Giuseppe CrimiVaroli  
Christopher Houde  
Sophia Irby  
Marketing  
Andrew Mitchell  
Information Systems and Business Analytics, Marketing  
Celia Prescott  
Finance, Marketing  
Socha Companies: Research, Design, and Develop Marketing Programs Aimed at Increasing Awareness of and Attracting New Customers to This Manchester, NH-Based, Apartment Rental Business
Allison Crowley  
Marketing  
Haley Demers  
Finance, Marketing  
Michael Grieve  
Finance, Marketing  
John Littlefield  
Management, Marketing  
Haylee Walsh  
Information Systems and Business Analytics, Marketing  
Michael Mulligan  
Management, Marketing  
Anthony DeGirolamo  
Finance, Marketing  
Sophia Hughes  
Marketing, Sociology  
Evelina Izdebski  
Management, Marketing  
Jenna Peterson  
Nicholas Salcito  
Marketing  
Port City Pretzels: Research and Develop Marketing Programs Aimed at Increasing Awareness of and Growing Sales for this Portsmouth, NH-Based, Woman-Owned Small Business  
Miranda Dow  
Art: Studio Art, Marketing  
Shelby Ganem  
Allyson Jacobs  
Entrepreneurial Studies, Marketing  
Ethan Landon  
Marketing, Psychology  
Matthew Paolucci  
Business Administration, Entrepreneurial Studies, Marketing  
Gavin Thibodeau  
Marketing  
Merritt Chiropractic: Design and Develop Marketing Programs Aimed at Increasing Awareness of and Business for This Local, Family-Owned Chiropractic Business in Durham, NH  
Matthew Dowling  
Marketing, Sustainability  
Amelia Marchand  
International Business and Economics, Marketing  
Elizabeth Marsden  
Information Systems and Business Analytics, Marketing  
Brandon Robinson  
Elizabeth Ruffner  
Marketing  
RAWZ Natural Pet Foods: Design and Develop Marketing Programs Aimed at Increasing Awareness and Sales of Products from This York, Maine-Based, Non-Profit Manufacturer of Pet Foods  
Jessica Favarolo  
Brendan Jacobs  
Donald MacCallum  
Jessica Nadeau  
Shannon Thomas  
Finance, Marketing  
Piscataqua Maritime Commission: Research and Develop Marketing Programs Aimed at Increasing Awareness of and Support for This NH-Based Non-Profit Organization  
Tyler Germain  
Cameron MacRae  
Jennifer Quigley  
Victoria Tenaglia  
Marketing  
Devin Sawtelle  
Entrepreneurial Studies, Marketing  
Oracle Safety Consulting: Design and Develop Marketing Programs Aimed at Increasing Engagements for This Londonderry, NH, Consulting Business  
Peter T. Paul College of Business and Economics Undergraduate Research Conference  
Oral Session II  
Friday, April 23  
Through original research and valuable guidance from mentors, this event helps Paul College students gain deeper academic knowledge as well as professional experience. This URC event includes poster presentations, oral presentations, and feedback from judges.  
Atkins Investment Group  
Advisers: Stephen Ciccone, Ahmad Etebari  
Sarah Blampied  
Jacob Burhans  
Lucas Jones  
Molly MacNeilly  
Myles Maloof  
Accounting, Finance  
Mark Borak  
Nicholas Fothergill  
Jack Gillis  
Matthew Gravallese  
Ann-Marie Kolberg  
Sophia Mazzarelli  
Grant Morhun  
Allie Reyes  
Steven Schnobrich  
Kyle Shaw  
Erik Sherkanowski  
Emily Strout  
Justin Szabo  
Finance  
Zachary Broder  
Manish Giri  
Economics, Finance  
Colin Buckley  
Marketing
Peter T. Paul College of Business and Economics Undergraduate Research Conference

Poster Session I

Friday, April 23
Through original research and valuable guidance from mentors, this event helps Paul College students gain deeper academic knowledge as well as professional experience. This URC event includes poster presentations, oral presentations, and feedback from judges.

**B.S. Economics & B.A. Economics**

Mohammed Abukhalaf  
International Business and Economics  
Manish Giri  
Economics, Finance  
John McDonough  
Economics  
The Economics Effect of Brexit  
Adviser: Reagan Baughman

Brenna Burkett  
Accounting, Economics  
Isabelle Kapoian  
Craig Millard  
Economics  
The Impact of Technological Growth on Health Spending in the United States  
Adviser: Reagan Baughman

Riley Burns  
Economics  
Samed Ramic  
John Washburn  
Accounting, Economics  
Social Benefits of Taxes on Cigarettes  
Adviser: Reagan Baughman

Maggie Carroll  
Joseph Rando  
Economics  
Steven McKeen  
Economics, Marketing  
Air Pollution in China: The Effect of Emissions Reduction Policies  
Adviser: Reagan Baughman

Kaya DeRobbio  
Economics  
Determinants of the Unemployment Rate  
Adviser: Aziz Saglam

Jack Franco  
Sean French  
Isabella Lovering  
Economics  
The Effect of Education on Crime  
Adviser: Reagan Baughman

Richard Grandstaff  
Economics  
Productivity and Pay: Is the Link Broken or Not?  
Adviser: Aziz Saglam

Treat Hardy  
Economics  
Chris Laudati  
Economics, Political Science  
Jordan Sardo  
Economics, Finance  
Win or Loss for the American Worker?  
Examining the Effects of NAFTA  
Adviser: Reagan Baughman

Camden Hearn  
Analytical Economics  
Factors Affecting Crime Rates  
Adviser: Aziz Saglam

Cameron Hebert  
Ethan Rotthoff  
Timothy Sullivan  
Economics  
How Automation Will Affect the American Workforce  
Adviser: Reagan Baughman

Joseph Henderson  
Aidan Kittredge  
Economics  
Cody Schoolcraft  
Analytical Economics  
The Effects of Student Loan Debt on Homeownership  
Adviser: Reagan Baughman

Noah Kerbyson  
Economics  
Effects of the Minimum Wage on Employment  
Adviser: Aziz Saglam

Edward Lange  
Analytical Economics  
Labor Force (Non)Participation: Trends, Causes  
Adviser: Aziz Saglam

Eric Lugli  
Economics  
Economic Effects of Olympic Games  
Adviser: Aziz Saglam
Peter T. Paul College of Business and Economics Undergraduate Research Conference

Poster Session II

Friday, April 23

Through original research and valuable guidance from mentors, this event helps Paul College students gain deeper academic knowledge as well as professional experience. This URC event includes poster presentations, oral presentations, and feedback from judges.

Information Systems and Business Analytics

Lucas Appleton
Brandon Clark
Business Administration, Information Systems and Business Analytics

John Hurley
Information Systems and Business Analytics, Sustainability

Rachel Strout
Finance, Information Systems and Business Analytics

Haylee Walsh
Information Systems and Business Analytics, Marketing

Customer Data Analysis for Johnson & Johnson
Adviser: Roger Grinde

Jared Bjornberg
Finance, Information Systems and Business Analytics

Kyle Capprini
Information Systems and Business Analytics, Management

Jocelyn Sheltra
Nikita Talwar
Information Systems and Business Analytics

New Point of Sale System for SEE Science Center
Advisers: Roger Grinde, Russell Miles

Hannah Carroll
Information Systems and Business Analytics, Marketing

Optimizing Seating with COVID Regulations
Adviser: Ali Hojjat

Koca Chan
Information Systems and Business Analytics, Marketing

Ethical Use of Beauty in Advertising
Adviser: Shuili Du

Liam Conrad
Information Systems and Business Analytics

Semiconductor Supply Chain Security Strategies
Adviser: Russell Miles

Kelsie Dawe
Finance, Information Systems and Business Analytics

Identifying the Glass Ceiling for Female Angel Investors
Adviser: Jeffrey Sohl

Jenna Frasier
Daniella Sirois
Finance, Information Systems and Business Analytics

Grant Workman
Information Systems and Business Analytics

ISBA Capstone: Worker Safety and Risk Assessment in a Manufacturing Setting
Adviser: Russell Miles

Ian Grant
Accounting, Information Systems and Business Analytics

What Type of Music Becomes Popular in a Crisis
Adviser: Kholekile Gwebu

Jake Hewins
Information Systems and Business Analytics

Predicting College Enrollment during a Global Crisis
Adviser: Burcu Eke Rubini

Kyle Jalbert
Finance, Information Systems and Business Analytics

Misinformation in the U.S. Presidential Election: An Analysis of Social Media Data
Adviser: Kholekile Gwebu
Isabelle Kapoian
Economics
The Present Azerbaijani Threat to Ethnic Armenian Cultural Heritage Following the 2020 Nagorno-Karabakh War
Adviser: Nicole Ruane

Samuel Lupinacci
Marketing
Improving the Evaluation of Prospects in the NBA Draft
Adviser: Moein Khanlari

Matthew Paolucci
Business Administration, Entrepreneurial Studies, Marketing
Forward-Looking Strategy for the Music Industry
Adviser: Andrew Earle

Jenna Peterson
Marketing
Understanding Secret Consumer Purchases and Their Effects on Brands
Adviser: Danielle Brick

Dagny Wilkins
Information Systems and Business Analytics, Management
Data Analytics: An In-Depth Job Analysis
Adviser: Kholekile Gwebu

Multidisciplinary/Honors Thesis

Sydney Carlisle
Accounting, Entrepreneurial Studies
U.S. Federal Tax Dollars Lost Due to Tax Havens
Adviser: William Knowles

Maria Chandra
Finance
Sunshine in the Stock Markets
Adviser: Wenjuan Xie

Kathleen Flath
Business Administration
British Petroleum’s Response to the Deepwater Horizon Oil Spill
Adviser: Wenjuan Xie

Samuel Hetu
Finance, Information Systems and Business Analytics
Investigation into Market Microstructure Evolution: The Impact of HFT Regulation on Markets
Advisers: Michael Hanlon, Mihail Miletkov

Alexander Heye
Accounting
The Future of Auditing: An Analysis of AI Implementation in the Big Four Accounting Firms
Adviser: Linda Ragland

Lucas Jones
Accounting, Finance
Business Risk and Attest Service Fees: Understanding the Effect of Low Fed Interest Rates on Bank Audit Fees
Adviser: Jonathan Nash

Yanni Kakouris
Business Administration
How Can an Economic Analysis Affect the Understanding of a Court’s Decision?
Adviser: James Wible

Hannah Kaplan
Management, Marketing
The Instagram Effect: Are Influencers Impacting Social Expectations and Purchasing Decisions of UNH Students?
Adviser: Peter Masucci

Samantha Lynch
Finance
Bringing Awareness to the Idea of Psychology Driving Markets
Adviser: Richard Kilbride

Samuel Mabile
Economics
Solar PV Preferences in Boston and Atlanta
Adviser: Ju-Chin Huang

Alexa Mayo
Business Administration, French
Brain Drain in European Origin Countries: The Case of Hungary (1990-2015)
Adviser: Marc Herold

Sadie Mazzola
Analytical Economics
The Role of Tax Incentives on Business Location and Economic Growth
Adviser: Reagan Baughman

Justin Mooney
Accounting, Information Systems and Business Analytics
COVID-19 and the Effects on World’s Most Admired Companies
Adviser: Le Emily Xu

Kyle Norman
Accounting
Effects of the CARES Act on Public Companies’ Pension Plans
Adviser: Catherine Plante

Matthew Oriente
Business Administration, Sustainability
Evaluation of Sustainable Investing by ESG Principles for the UNH Foundation
Adviser: Erik Gross

Sean Orr
Economics
COVID-19’s Impact on the U.S. Labor Market
Adviser: Reagan Baughman

Jessica Oswald
Accounting, International Business and Economics
Adviser: Le Emily Xu

Ajaypal Panesar
Economics
Tooth Be Told: The Effects of Integrating Oral Health into Primary Care Coverage on Health Outcomes and Patient Well-Being in the United States
Adviser: Brad Herring

Coleman Russell
Accounting, Management
Do PCAOB Inspection Reports Incentivize Auditors to Improve Audit Quality?
Adviser: Jonathan Nash

John Washburn
Accounting, Economics
Income Inequality Effects on Work Movement during the Pandemic
Adviser: Loris Rubini
Through original research and valuable guidance from mentors, this event helps Paul College students gain deeper academic knowledge as well as professional experience. This URC event includes poster presentations, oral presentations, and feedback from judges.

**EcoGastronomy**

Althea Ansah  
Ecogastronomy, Nutrition  
*Maple Leaf Nutrition LLC: Integrating New Hampshire Agriculture with Nutritional Coaching Services*  
Adviser: Daniel Winans

Kerry Hull  
Ecogastronomy, Sustainable Agriculture and Food Systems  
*Fermenting in a College Kitchen: Cost-Benefit Analysis*  
Adviser: Daniel Winans

Emily Johnson  
Ecogastronomy, Environmental Sciences  
*Mindful Meat: A Guide to Sustainable Animal Consumption*  
Adviser: Daniel Winans

Rebecca Malloy  
Ecogastronomy, Environmental Conservation and Sustainability  
*Eating with the Ecosystem: Evaluating Different Ways to Support Biodiversity with Food and Consumer Habits*  
Adviser: Daniel Winans

Alexandra Papadakis  
Ecogastronomy, Nutrition  
*Dietary Quality of Bhutanese Refugee Adults Eligible for the Supplemental Nutrition Assistance Program*  
Advisers: Sherman Bigornia, Daniel Winans

**Economics of Climate Change**

Adviser: Robert Mohr

Bryce Barrett  
Maximillian Watson  
Economics  
*Information Systems and Business Analytics, Sustainability*

Andrew Volmar  
Analytical Economics  
*Carbon Pricing around the World with Cases from China, Canada, British Columbia, and Australia*

Cole Bartlett  
Economics, Sustainability  
*Cost-Benefit Analysis*

Steven McKeen  
Economics, Marketing  
*Trade Balance*

Logan Slattery  
Economics, Political Science  
*New Zealand’s Carbon Emission Trading Scheme*

John Washburn  
Accounting, Economics  
*California Climate Change Policy*

Matthew Batta  
Finance  
*Proposals for Greenhouse Gas Regulation in Pennsylvania and Massachusetts*

Mackenzie Redmond  
Economics, Information Systems and Business Analytics  
*Analyzing the Clean Power Plan*

Timothy Campbell  
Economics  
*Peter Logee*  
Applied Mathematics  
*Bosibori Mosongo*  
Analytical Economics, Sustainability  
*Pricing Emissions with the Regional Greenhouse Gas Initiative*

Jill Durkin  
Economics, Finance  
*Hayley Isdale*  
Economics  
*Grace O’Connor*  
Finance  
*Biden Administration Climate Proposals: Building Back Better Environmental Policies*

Camden Hearn  
Analytical Economics  
*Brenna McNamara*  
Environmental Conservation and Sustainability  
*Catherine Taylor*  
Environmental and Resource Economics  
*Analysis of Regional Greenhouse Gas Initiative (RGGI)*

Joseph Henderson  
Wesley Kunin  
Economics  
*Two Economists’ Perspectives on California’s Carbon Pricing*

Grace McCurley  
Kevin Teng  
Undeclared  
*Paige Noble*  
Environmental and Resource Economics  
*California Climate Change Policy*

Jacob Teixeira  
Finance  
*Sean Walter*  
Economics, Finance  
*Proposals for Greenhouse Gas Regulation in Pennsylvania and Massachusetts*
UNH Manchester
URC Engineering Technology Day

Senior Project Presentations

Friday, April 23
The UNHM Engineering Technology Program presents its annual Senior Project Presentations day. This event is the culmination of an academic year effort where full-time seniors formally present their projects to peers, faculty members, representatives and technical advisers of sponsoring companies, and special guests.

Owen Armbricht  
James Knight  
Cody McCarthy  
Tyler St Denis  
Mechanical Engineering Technology  
VEX-U Robotics Competition: Team UNHM-1  
Adviser: Robert Arredondo

Ethan Brown  
Brad Ferreira  
Mechanical Engineering Technology  
Ryan Murphy  
Dung Tran  
Electrical Engineering Technology  
VEX-U Robotics Competition: Team UNHM-5  
Adviser: Robert Arredondo

Brenda Cardenas  
Joshua Seiler  
Mechanical Engineering  
Jacob Moreau  
Mechanical Engineering Technology  
VEX-U Robotics Competition: Team UNHM-3  
Adviser: Robert Arredondo

Alexis Condon  
Electrical Engineering Technology  
Proposal for a Robotic Working Cell  
Adviser: Robert Arredondo

Jordan Cusano  
Nathan Landry  
Steven Stanton  
Mechanical Engineering Technology

Michael Lucci  
Electrical Engineering Technology  
VEX-U Robotics Competition: Team UNHM-4  
Adviser: Robert Arredondo

Kevin Daley  
Erik Weber  
Mechanical Engineering Technology

Karan Lekhi  
Electrical Engineering Technology  
VEX-U Robotics Competition: Team UNHM-2  
Adviser: Robert Arredondo

Patrick Dodge  
Electrical Engineering  
Line 3  
Advisers: Robert Arredondo, Takahide Ohkami

Jeffery Dominguez  
Electrical Engineering Technology  
Wafer Map and Automation System Control  
Adviser: Robert Arredondo

Owen Armbricht  
James Knight  
Cody McCarthy  
Tyler St Denis  
Mechanical Engineering Technology  
VEX-U Robotics Competition: Team UNHM-1  
Adviser: Robert Arredondo

Ethan Brown  
Brad Ferreira  
Mechanical Engineering Technology  
Ryan Murphy  
Dung Tran  
Electrical Engineering Technology  
VEX-U Robotics Competition: Team UNHM-5  
Adviser: Robert Arredondo

Brenda Cardenas  
Joshua Seiler  
Mechanical Engineering  
Jacob Moreau  
Mechanical Engineering Technology  
VEX-U Robotics Competition: Team UNHM-3  
Adviser: Robert Arredondo

Alexis Condon  
Electrical Engineering Technology  
Proposal for a Robotic Working Cell  
Adviser: Robert Arredondo

Jordan Cusano  
Nathan Landry  
Steven Stanton  
Mechanical Engineering Technology

Michael Lucci  
Electrical Engineering Technology  
VEX-U Robotics Competition: Team UNHM-4  
Adviser: Robert Arredondo

Kevin Daley  
Erik Weber  
Mechanical Engineering Technology

Karan Lekhi  
Electrical Engineering Technology  
VEX-U Robotics Competition: Team UNHM-2  
Adviser: Robert Arredondo

Patrick Dodge  
Electrical Engineering  
Line 3  
Advisers: Robert Arredondo, Takahide Ohkami

Jeffery Dominguez  
Electrical Engineering Technology  
Wafer Map and Automation System Control  
Adviser: Robert Arredondo

The Naked Arts—Creativity Exposed!

Friday, April 23
This event exposes the inner creative process of artists working in various disciplines. Presenters will describe the process, research, and other creative aspects undertaken to bring an artistic creation from initial inspiration to the stage or gallery. This may include a performance or excerpts from their work to illustrate their creative scholarship.

Sarah Aznive  
Art: Art History, History

Meghan Feeney  
Art: Studio Art

Sarah Marie Jarrar  
Anthropology, History

Emily Vadeboncoeur  
Art: Art History  
Remembering Mosul: Digital Documentation and Preservation of a Ruined City  
Advisers: Ivo Van der Graaff, Ethel Wolper

Audrey Cannon  
Art: Studio Art  
Painting with Light  
Adviser: Sachiko Akiyama

Alizah Coraccio  
Fine Arts  
Exploration of Abstract Forms in Clay  
Adviser: Sachiko Akiyama

Tyler DiGregorio-Aubin  
Theatre  
The Applications of 3-D Printing in Theatre  
Adviser: Szu-Feng Chen

Julian Maduro  
English  
The Summer without Little Debbie  
Adviser: Clark Knowles

Allison Musitano  
English Teaching  
A Winter Life: The Short Story Process  
Adviser: Clark Knowles
Annelise Papinsick  
Humanities, Music  
*The Role of the Piano in Celtic Music*  
Adviser: Rose Pruiksma

Alise Shuten  
Psychology, Theatre  
*Dance/Movement Therapy in a Psychotherapy Culture*  
Advisers: Assaf Benchetrit, Gay Nardone

Julia Sommer  
Theatre  
*Molière and COVID-19*  
Adviser: Szu-Feng Chen

Emma Stine  
Art: Studio Art, Italian Studies  
*Experiments in Figure Painting*  
Adviser: Sachiko Akiyama

Clare Terrio  
Psychology, Theatre  
*My Body Is Home: Self Image and Dance*  
Adviser: Gay Nardone

E.J. Theriault  
Fine Arts  
*Questioning Sustainability through Sculpture*  
Adviser: Sachiko Akiyama

Alexandra Vergara  
English Teaching  
*A Letter to Elektra*  
Adviser: Shelley Girdner

Megan Wilson  
Fine Arts  
*Exploring Nature through Painting*  
Adviser: Sachiko Akiyama

Emily Wozer  
Nutrition, Theatre  
*The Effects of Dance Training on Body Image*  
Adviser: Assaf Benchetrit

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**Senior B.A. & B.F.A. Exhibition**

Friday, April 23  
This annual show celebrates the achievements of graduating art students from the UNH Department of Art and Art History.

Adviser: Sachiko Akiyama

Audrey Cannon  
Art: Studio Art  
*Painting with Light*

Alizah Coraccio  
Fine Arts  
*Exploration of Abstract Forms in Clay*

Emma Stine  
Art: Studio Art, Italian Studies  
*Experiments in Figure Painting*

E.J. Theriault  
Fine Arts  
*Questioning Sustainability through Sculpture*

Megan Wilson  
Fine Arts  
*Exploring Nature through Painting*

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**College of Health and Human Services (CHHS) Grimes Award Competition**

Friday, April 23  
Jack and Marianna Grimes and family, all UNH graduates, endowed the funds for this celebration of excellence in undergraduate research. The oral presentation competition includes finalists who have been selected by CHHS faculty after rigorous scientific review of written proposals.

Victoria Dobrzycki  
Health Management and Policy  
*Associations of Opioid/Prescription Drug Misuse with Suicidal Ideation, Bullying, and Dietary Factors among U.S. High School Students*  
Adviser: Semra Aytur

Faith Farnham  
Nursing  
*Health Needs and Accessibility of Syringe Service Programs (SSPs) and Healthcare and Support Services in Manchester*  
Adviser: Kerry Nolte

Ashlyn Murphy  
Communication Sciences and Disorders  
*The Impact of Child-Directed Speech during Parent-Child Interactions in a Museum*  
Adviser: Jill Thorson

Justice Ohanasian  
Social Work, Spanish  
*Analyzing the Perceived Barriers to Reporting Sexual Violence among College Students*  
Adviser: Tarkington Newman

Danielle Picot  
Human Development and Family Studies  
*Individualized Coaching to Improve Preschool Quality: Preception from Teachers and Administrators*  
Adviser: Kimberly Nesbitt

Rebecca Proulx  
Human Development and Family Studies  
*How Do Secure Children Problem Solve? Thematic Coding of the Attachment Story Completion Task*  
Adviser: Jill Sherman

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**Peter T. Paul College of Business and Economics Paul J. Holloway Prize Innovation to Market Competition**

**Bud Albin Challenge Round**

Friday, April 23  
The Bud Albin Challenge acts as the Semi-Final Round of the Holloway Prize Innovation to Market Competition. Twenty teams present their business concepts to a panel of industry judges. From here, six will be selected to move on to the Championship Round.
Carli Rita  
Occupational Therapy  
*The Efficacy of the Healthy Families Flourish Program for Families Raising Children with Autism*  
Adviser: Sarah Smith

Kaitlyn Seamans  
Occupational Therapy  
*Influence of Sign Language on Undesirable Behaviors of a Child with Developmental Delay: Single-Case Experimental Design*  
Adviser: Lou Ann Griswold

Kristin Short  
Occupational Therapy  
*Living through a Pandemic: A Study on the Social Interaction of College Students during COVID-19*  
Adviser: Lou Ann Griswold

Violet Sullivan  
Kinesiology  
*Running History and Injury Status in Female Current and Former Division 1 Distance Runners during the COVID-19 Pandemic*  
Adviser: Summer Cook

Krysten Walker  
Occupational Therapy  
*Member Perceptions of an Online Community-Based Program for Adults with Brain Injury*  
Adviser: Barbara White

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**Honors English Undergraduate Research Conference**

**Friday, April 23**

To complete Honors-in-English, students must conduct a semester-long research project, culminating in a 30-40 page senior thesis. The Honors English URC provides these students and students in the linguistics program with the opportunity to share their work with their fellow students, professors, and families. The presentations include poetry, autobiographical writing, journalism, and scholarship on literary texts from several different centuries.

Marlies Amberger  
English  
*Shades of Tangerine: A Creative Nonfiction Exploration of Feminism in the 1960s and 1970s*  
Adviser: Jaed Coffin

Parker Ayotte  
English  
*Multimedia of the Mind: Digital Rhetoric and Interdisciplinary Acquisition*  
Adviser: Melinda White

Rose Correll  
English/Journalism  
*Boston Globe Spotlight: Investigative Reporting on Church Abuse Then and Now*  
Adviser: Tom Haines

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**Psychology Department George M. Haslerud Undergraduate Research Conference**

**Friday, April 23**

The George M. Haslerud URC, named for the late Professor Emeritus of Psychology, recognizes and celebrates undergraduate research conducted by Honors psychology students. Students present their original research projects before an audience of UNH faculty, staff, graduate students, fellow undergraduates, and friends and family.

Kristen Graham  
Justice Studies, Psychology  
*Intimate Partner Violence and Bystander Behavior*  
Adviser: Jolie Wormwood

Emily Handy  
Psychology  
*The Effects of Online and In-Person Courses on Public Speaking Anxiety*  
Advisers: Katerina Karaivanova, Caitlin Mills

Anna Kalinowski  
English, Psychology  
*Corticostriatal Pathway Inactivation and Its Connections to Associative Learning with Nicotine Stimulus in Rats*  
Adviser: Sergios Charntikov

Sofia Lombardo  
Justice Studies, Psychology  
*Increment and Decrement Effects in Motion-Induced Blindness*  
Advisers: John Sparrow, William Stine, Dan Swift

Elizabeth McGowan  
Psychology  
*The Relationship between COVID-19 Rule Compliance and Anxiety and Depression among Different Populations*  
Adviser: Ellen Cohn
Molly O’Shea  
Justice Studies, Psychology  
*Impacts of COVID-19 and Social Media Use on Mental Health*  
Adviser: Ellen Cohn

Gordon Unzen  
Justice Studies, Philosophy, Psychology  
*Political Ideology Effects on Legal Socialization*  
Adviser: Ellen Cohn

Rachel Young  
Justice Studies, Psychology, Women’s and Gender Studies  
*The Intersection of Race and Sex in Crime Victims*  
Adviser: Ellen Cohn

Julia Squillace  
Wildlife and Conservation Biology  
*Linking Nest Timing Phenotypes to DNA Methylation of Circadian Rhythm Genes in Breeding Female Tidal Marsh Sparrows*  
Adviser: Adrienne Kovach

Khem Basnet  
Sustainable Agriculture and Food Systems  
*The Effect of Pollen Source on Fruit Quality: An Investigation of the Xenia Effect in Kiwiberry (Actinidia arguta)*  
Adviser: Iago Hale

Julie Bobyock  
Environmental Sciences  
*The Impact of Water Withdrawals on Summer Low Flows in the Ipswich River Watershed, MA*  
Adviser: Wilfred Wollheim

Ava Boutilier  
Biomedical Science  
*Anticoagulant Rodenticide, Canine Distemper Virus, and Necropsy Findings in Fisher, Gray Fox, and Red Fox from NH*  
Adviser: David Needle

Diya Anand  
Biology  
*Identifying the Effects of Various Fractions of the Devil’s Club Plant on SARS-CoV-2*  
Adviser: Brian Barth

Chiara Antonioli  
Biomedical Science  
*Anticoagulant Rodenticide, Canine Distemper Virus, and Necropsy Findings in Fisher, Gray Fox, and Red Fox from NH*  
Adviser: David Needle

Emma Arsenault  
Biochemistry, Molecular and Cellular Biology  
*The Effects of Devil’s Club (Oplopanax horridus) Root Extract Fractions in Acute Myeloid Leukemia*  
Adviser: Brian Barth

Ian Ayer  
Biomedical Science  
*Regulation of Fibroblast Growth Factor 2 (FGF2) and Cellular Communication Network Factor 1 (CCN1) by Thyroid Hormone in the Mid-Cycle Bovine Corpus Luteum*  
Adviser: Paul Tsang
Aliya Caldwell
Lok Cheng
Cate Wardinski
Marine, Estuarine and Freshwater Biology
Lauren McDowell
Marine, Estuarine and Freshwater Biology, Sustainability
Evaluating Regurgitated Pellets as Indicators of Microplastic Ingestion by NH-Breeding Seabirds
Advisers: Bonnie Brown, Elizabeth Craig

Justine Cassel
Marine, Estuarine and Freshwater Biology
Cyanoacteria Communities under Opaque Ice: Analyzing Size and Pigment Changes with Depth
Advisers: James Haney, Katherine Low

Jeanne Cassidy
Biomedical Science
Determination of the Effects Maternal Colostrum Has on the Small Intestinal Development of Calves Evidenced by D-xylene Absorption
Advisers: Peter Erickson, Tess Stahl

Lok Cheng
Marine, Estuarine and Freshwater Biology
Sydney Mapley
Biochemistry
Assessing Predator-Prey Interactions between Migrating Juvenile Sockeye Salmon Smolts and Bull Trout in British Columbia
Adviser: Nathan Furey

Alexus Day
Biomedical Science
Bert Prince
Biochemistry, Molecular and Cellular Biology
Impacts of Obesity on Ceramide Treatment for Acute Myeloid Leukemia
Adviser: Brian Barth

Jacob Dearborn
Wildlife and Conservation Biology
Evaluating the Use and Accuracy of Unmanned Aerial Systems (UAS) for Forest Health and Individual Tree Measurements in New England Forest Communities
Adviser: Russell Congalton

Lillian Delgado
Marine, Estuarine and Freshwater Biology
Cyanotoxin Accumulation in Northeastern Seabird Tissues
Adviser: James Haney

Angelica Dziurzynski
Earth Sciences, Marine, Estuarine and Freshwater Biology
The Impact of Sedges on Belowground Methane Concentration and Diffusion in a Temperate Peatland
Adviser: Ruth Varner

Larissa Fairweather
Kaci Gilbert
Marisol Mendoza
Biochemistry, Molecular and Cellular Biology
Investigating the Substrate Specificity of Human Lactate Dehydrogenase Using Site-Directed Mutagensis
Advisers: Rick Cote, Laurie Westover

Hannah Flaherty
Biomedical Science
Streptomyces hygroscopicus in the Stellwagen Bank National Marine Sanctuary: Discovery of Biosynthetic Gene Clusters with Potential to Produce Chemotherapeutic Compounds
Advisers: Semra Aytur, John Bucci

Lilly Friedman
Biomedical Science
Gene Editing in Actinobacteria
Adviser: Louis Tisa

Tanner Frost
Forestry
Comparison of Methods to Quantify Changes in Tree Productivity under Drought Conditions
Adviser: Matthew Vadeboncoeur

Alexia Gianoulis
Biomedical Science
Using the Plasma Dose Response Method to Determine If the Next Generation AjiPro-L is More Effective Than the Third Generation AjiPro-L
Adviser: Nancy Whitehouse

Alyssa Greig
Biomedical Science
Comparative in silico Analysis of Bromodomain-Containing Regulatory Complexes in Apicomplexan Parasites
Adviser: Vicki Jeffers

Joshua Hall
Biomedical Science
Postmortem and Diagnostic Findings in 38 Canada Lynx (Lynx canadensis)
Advisers: Colleen Monahan, David Needle

Hayleigh Hildebrand
Environmental Sciences, Russian
How Does Agricultural Management Affect the Distribution of Organic N into Different Soil Pools?
Advisers: Lauren Breza, A. Stuart Grandy

Holly Hoag
Zoology
Mandibular Gland Volume Variation across Jewel Wasp (Nasonia spp.) Species and Sex
Adviser: Istvan Miko

Donnelly Hutchings
Biochemistry, Molecular and Cellular Biology
Do the Phytoestrogens Daidzein and Equol Impact the Expression of Cellular Communication Network Factor 1 (CCN1) and Vascular Endothelial Growth Factor A (VEGFA) in the Young Bovine Corpus Luteum (CL)?
Adviser: Paul Tsang

Sam Kitfield-Vernon
Environmental Conservation and Sustainability
Evaluating Seasonal Storage Technologies for the United States and UNH
Adviser: Clayton Mitchell

Jacqueline Klombers
Biology
Joseph Ledan
Marine, Estuarine and Freshwater Biology
Examining Behavior of Lumpfish, Cyclopterus lumpus, under Differing Light Levels
Advisers: Michael Doherty, Elizabeth Fairchild
Laura Lynch  
Sarah Waleryszak  
Nutrition  
Exploring COVID-19 Effects on Level of Food Insecurity among College Students  
Adviser: Jesse Morrell

Sara Manzelli  
Sustainability, Zoology  
Black-Footed Cat (Felis nigripes) Hansbrandy: Improving Captive Experience via Enrichment  
Adviser: Janet Anderson

Kelsey Mercurio  
Biochemistry, Molecular and Cellular Biology, Sustainable Agriculture and Food Systems  
Roles of Non-Frankia Bacteria in Root Nodule Formation and Function in Alnus glutinosa  
Adviser: Louis Tisa

Elizabeth Miller  
Animal Science  
Epidemiological Evaluation of Medical and Behavioral Illness at the Pope Memorial Humane Society  
Adviser: Sarah Proctor

Jonathan Moehlmann  
Biomedical Science  
Potential Chenopodium ficifolium Resistance to Glyphosate in New England Agriculture  
Adviser: Thomas Davis

Megan Molinari  
Marine, Estuarine and Freshwater Biology, Neuroscience and Behavior  
Evaluating Alternative Bait Ingredients for the Channeled Whelk Fishery  
Adviser: Elizabeth Fairchild

Elizabeth Nerney  
Marine, Estuarine and Freshwater Biology  
Phytoplankton Growth Response to Microplastics  
Adviser: Liz Harvey

Griffin Nye  
Biomedical Science  
Bat-Associated Streptomyces Bacteria Produce Antiviral Peptides (AVPs) That Target Clinically Relevant Viral Families  
Adviser: Cheryl Andam

Erica Oliver  
Biomedical Science  
Using the Plasma AA Dose-Response Method to Compare the Methionine Bioavailability of Two Rumen Protected Encapsulated Supplements  
Adviser: Nancy Whitehouse

Alexandra Papadakis  
Ecoastronomy, Nutrition  
Dietary Quality of Bhutanese Refugee Adults Eligible for the Supplemental Nutrition Assistance Program  
Advisers: Sherman Bigornia, Daniel Winans

Alexandra Papadakis  
Ecoastronomy, Nutrition  
National Disparities in Food Security, Social Vulnerability, and Health Conditions: Considerations for the COVID-19 Pandemic  
Advisers: Semra Aytur, Jessica Carson, Amy Taetzsch

Julia Paquette  
Biomedical Science  
Factor Fiction? Identifying a Putative Toxoplasma gondii Transcriptional Complex  
Adviser: Vicki Jeffers

Robyn Parker  
Wildlife and Conservation Biology  
Effects of Small Mammal Seed Predation on Seedling Establishment in Northern New Hampshire  
Advisers: Rebecca Rowe, Ryan Stephens

Maeve Perrin  
Equine Studies  
Effects of the Air Quality in Equine Stable Environments on the Respiratory Health and Allergy Response of Human Personnel: A Review  
Adviser: Christina Keim

Joseph Philbrick  
Biology, Sustainability  
Benthic Cyanotoxin Transfer in the Oyster River Food Web  
Advisers: James Haney, Katherine Low

Ryan Puterbaugh  
Biochemistry, Molecular and Cellular Biology  
Structural Studies of a Regulator of G-Protein Signaling  
Adviser: Krisztina Varga
Caridad Reyes  
Neuroscience and Behavior  
An Analysis of Signal Qualities of Acheta domesticus Calls Produced during Exposure to Noise Perceived via Different Sensory Pathways  
Adviser: Daniel Howard

Chloe Richard  
Biomedical Science  
A Survey of Opportunistic Fungi in the Portsmouth, NH, Region  
Adviser: Juan Rojo

Paul Rozenberg  
Environmental Sciences  
How Does Streamflow Affect Specific Conductivity in Streams?  
Adviser: Wilfred Wollheim

Savannah Salvage  
Neuroscience and Behavior  
Meta-Analytic Connectivity Modeling of Brain Regions Related to Deception  
Advisers: Sarah Meier, Donald Robin

Samantha Schultz  
Genetics  
Effect of Rosiglitazone on STAT3 Inhibition in Breast Cancer Cells  
Adviser: Sarah Walker

Summer Smith  
Biomedical Science  
Ursoic Acid Blocks the NADPH Oxidase in Pathways of Neuroinflammation  
Adviser: Juan Rojo

Brittney Spooner  
Biomedical Science  
Estimated Glomerular Filtration Rates and the Racial Multiplier: Clinical Implications and Current Attitudes  
Adviser: Juan Rojo

Julia Squillace  
Wildlife and Conservation Biology  
Linking Nest Timing Phenotypes to DNA Methylation of Circadian Rhythm Genes in Breeding Female Tidal Marsh Sparrows  
Adviser: Adrienne Kovach

McKenna Wells  
Environmental Sciences  
Assessing the Impacts of COVID-19 on Plastic Consumption and Recycling Behaviors on College Campuses  
Adviser: Patricia Jarema

Natalie White  
Environmental Sciences  
Assessing Salt Marsh Erosion along Moody Point on New Hampshire’s Great Bay Estuary  
Adviser: Gregg Moore

Emily Williams  
Biology  
Biomagnification of BMAA in the Aquatic Food Web of Oyster River  
Adviser: James Haney

Interdisciplinary Science & Engineering (ISE) Symposium

Poster Presentations

Wednesday, April 28
The ISE Symposium welcomes and encourages scientific presentations from undergraduate students in all colleges and departments. The event features undergraduate research that contributes to or benefits from an interdisciplinary science and engineering perspective.

Biology

Group Leader: Krisztina Varga

Kelsey Mercurio  
Biochemistry, Molecular and Cellular Biology, Sustainable Agriculture and Food Systems  
Roles of Non-Fraknia Bacteria in Root Nodule Formation and Function in Alnus glutinosus  
Adviser: Louis Tisa

Ryan Puterbaugh  
Biochemistry, Molecular and Cellular Biology  
Structural Studies of a Regulator of G-Protein Signaling  
Adviser: Krisztina Varga

Maria Seneres  
Bioengineering  
Constructing Molecular Models of Tripeptides with Sequence-Encoded Properties  
Adviser: Harish Vashisth

Chemistry

Group Leader: Richard Johnson

Sawyer Cawthern  
Chemistry  
Investigation of Controlled on Demand Self-Assembly and Disassembly of Polymer Nanostructures  
Adviser: Erik Berda

Alec Espinola  
Chemistry  
Comparison of Chlorine-Detecting Devices in Ship Ballasts  
Adviser: Anyin Li

Adam Joos  
Chemistry  
Bioconjugation of an Antifreeze Protein to a Synthesized Copolymer  
Adviser: John Tsavalas

Julia Leary  
Chemistry  
Investigation of Aniline Bipyridine as a Metal-Free Hydrogen Producing Ligand  
Adviser: Christine Caputo

Michael Miller  
Chemistry  
En Route to Cyclacenes: A Diels-Alder Strategy for the Synthesis of Molecular Belts  
Adviser: Richard Johnson

James Wilkes  
Chemistry  
The Synthesis of Benzyl and Methyl Pyrene Modified Nickel Cyclams for CO2 Reduction  
Adviser: Christine Caputo

Tyler St. Peter  
Chemistry  
Using Ribosomes to Create Other Polymers  
Adviser: John Tsavalas
Civil Engineering — Design

Group Leaders: Eshan Dave, Anthony Puntin

Gabriel Archambault
Environmental Engineering

Gordon Hoyt
Tyler Moore
Civil Engineering

Barrington, NH, Malleco Road Bridge
Advisers: Saeed Eftekhar Azam, Kayla Hampe, Jillian Semprini

Niroj Bhattarai
John Leach
Cassie Norton
Civil Engineering

Jessica Manning
Environmental Engineering

Sheehan-Basquiel Park Site Renovation
Adviser: Anthony Puntin

Samuel Brandt
Cole Contigiani
Hannah Miller
Adam Wielebinski
Civil Engineering

The Hell Gate Wharf Rehabilitation
Adviser: Jo Sias

Olivia Caron
Erica Eames
Matthew Fitzpatrick
Christopher Looney
Olivia Oskin
Civil Engineering

Hamilton Canal Multi-Use Tower
Adviser: Anthony Puntin

Jacey Chavez
Tyler Heymans
John Plifka
Civil Engineering

Hannah Gagne
Luke Zuchowski
Environmental Engineering

Meredith Madden
Nicole Ramaker
Jonathan Stahl
Nicholas Thum
Mechanical Engineering

Michael Pasciuto
Mechanical Engineering, Sustainability

Department of Energy U.S. Solar Decathlon
Advisers: Felix Devito, Martin Wosnik

Morgan Conklin
Eli Moslow
Civil Engineering

Joshua Howard
Carolina Patino
Environmental Engineering

City of Manchester Christian Brook
CSO Separation Project
Advisers: Jeremy Bouvier, Frederick McNeill, Weiwei Mo

Nicholas Eagan
Dillon Eberhardt
Joshua Landry
Christopher O’Leary
Troy Thirkell
Civil Engineering

U.S. Route 1 Bypass Bridge Replacement, Kittery, ME
Adviser: Matthew Low

Casey Hughes
Daniel Page
Joseph Yurczyk
Civil Engineering

Indian Carry Road Stream Crossing Project
Adviser: Kenneth Flesher

Civil Engineering — Investigation

Group Leaders: Eshan Dave, Anthony Puntin

Brandon Belmonte
Joseph DeGregorio
Andrew Godfrey
Jessica Nekowitsch
Environmental Engineering

CEE 798: Evaluating the Implementation of Stormwater BMPs in Portsmouth, NH
Advisers: Erin Bell, James Houle

Alden Blais
Ailish Bozzo
Ryan Daley
Civil Engineering

Harvard Museum of Comparative Zoology
Adviser: Raymond Cook

Sage Cawthern
Emily Clickner
Joseph Jorgens
Ryan Savoy
Guillermo Sepulveda
Civil Engineering

Portsmouth Senior Center Structural Assessment
Advisers: Robert Henry, Tim Nichols, Tyler Renz, Carter Terry

Isaac Colcord
Nicholas Whitley
Civil Engineering

Dylan Erasmus
Environmental Engineering

Steven Rizzo
Environmental Engineering, Sustainability

Construction of Luxury Apartments over a Former MGP Site
Advisers: Jean Benoit, Jay Hodkinson, Anthony Puntin

Jack Doherty
Civil Engineering

Jin Yang
Environmental Engineering

Maintaining Unpaved Roads
Adviser: Eshan Dave

Ryan Fournier
Environmental Engineering

Joshua Joslyn-Grasewicz
Stephen Roche
Ethan Smith
Jacob Stoddard
Civil Engineering

Livermore, NH, Resort Development and Dam Design Feasibility Project
Adviser: Anthony Puntin

Jesse Jakubajtys
Christian Miloio
Calvin Poitras
Civil Engineering

Lee Center Intersection Road Safety Audit
Adviser: Kyle Kwiatkowski

Andrew Weaver
Environmental Engineering

Tidal Culvert Analysis in Georgetown, ME
Adviser: Nancy Kinner
Civil Engineering — Research

Group Leaders: Eshan Dave, Anthony Puntin

Jessica Buhler
Shane Fillion
Gage Moran
Environmental Engineering
Reducing Hydrogen Sulfide in Augusta, Maine, Main Sewer Line
Adviser: M. Robin Collins

Gregory Bush
Sara Murcko
Garry Yapto
Environmental Engineering
Quantifying the PFAS Cycle
Adviser: James Malley

Sage Cawthern
Civil Engineering
Replacing a Load-Bearing Wall with a Beam
Adviser: Raymond Cook

Joseph DeGregorio
Environmental Engineering
Initial Characterization of Microplastics in the Great Bay Estuary
Adviser: Paula Mouser

Ian Desmarais
Civil Engineering
Exploring the Relationship between Poverty Levels and Typhoon Mortalities in the Philippines
Adviser: Kyle Kwiatkowski

Ian Desmarais
Garrett Puchalski
Joshua Rowland
Civil Engineering
Seismic Resilience and Adaptation of Arctic Infrastructure and Social Systems
Adviser: Majid Ghayoomi

Ryan Fournier
Environmental Engineering
An Analysis of SARS-CoV-2 Biomarker Concentrations at the Durham Wastewater Treatment Plant
Adviser: Paula Mouser

Holly Proulx
Cameron Wagner
Environmental Engineering
Michael Tung
Cameron Ugolini
Mechanical Engineering
UAV Snow Mapping for Avalanche Forecasting in Tuckerman Ravine
Adviser: Jennifer Jacobs

Environmental Engineering
Reducing Hydrogen Sulfide in Augusta, Maine, Main Sewer Line
Adviser: M. Robin Collins

Gregory Bush
Sara Murcko
Garry Yapto
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Environmental Engineering
An Analysis of SARS-CoV-2 Biomarker Concentrations at the Durham Wastewater Treatment Plant
Adviser: Paula Mouser

Computer Engineering

Group Leader: Wayne Smith

Abdulla Saeed Al-Hajri
Computer Engineering
Solar Panel Cooling System
Adviser: Edward Song

Travis Canfield
Joseph Lagasse
Patrick Scott
Computer Engineering
Smartphone-Based Video Conferencing System
Adviser: Edward Song

Ryan Conte
Robert Lee
Computer Engineering
Meshed LoRa Wide Area Network of Sensor Nodes for Precision Farming
Adviser: MD Shaad Mahmud

Nathanael Frisch
Computer Engineering
Anushreeya Gurung
Analytics and Data Science
Daniel McCarthy
Computer Science
Samuel Mercer
Chemical Engineering
Wireless Data Processing System for Localized IoT-Enabled Device Networks
Adviser: Alexandra Contosta

Computer Science — Applications

Group Leaders: David Benedetto, Matthew Plumlee

Ramya Bathula
Computer Science
Ryan Lawes
Michael Survilas
Information Technology
Study Abroad Course Transfer Database
Advisers: David Benedetto, Catherine D’Auteuil

Bowen Bilodeau
Bryan Choate
Ryan Lefebvre
Keelan Piispanen
Computer Science
LS-ADAPT
Adviser: David Benedetto

Jacob Galas
Bing Yi Liu
Jake Nicholas
Computer Science
Travis Raynolds
Information Technology
VR Space Science: Electromagnetic Flow Field Visualizations
Adviser: Matthew Plumlee

Pratyush Kharel
Information Technology
Crystal O’Brien
Scotton Price
Computer Science
Web-Based Augmented Laboratory Learning Experiences (WALLE)
Advisers: Betsy Coleman, Matthew Plumlee

Connor Lacourse
Ethan Lisi
Caleb Peffer
Computer Science
Hallhub: Reinventing Event Promotion and Residence Hall Management on Campus
Adviser: Matthew Plumlee

Holly Proulx
Cameron Wagner
Environmental Engineering
Michael Tung
Cameron Ugolini
Mechanical Engineering
UAV Snow Mapping for Avalanche Forecasting in Tuckerman Ravine
Adviser: Jennifer Jacobs

Computer Engineering

Group Leader: Wayne Smith

Abdulla Saeed Al-Hajri
Computer Engineering
Solar Panel Cooling System
Adviser: Edward Song

Travis Canfield
Joseph Lagasse
Patrick Scott
Computer Engineering
Smartphone-Based Video Conferencing System
Adviser: Edward Song

Ryan Conte
Robert Lee
Computer Engineering
Meshed LoRa Wide Area Network of Sensor Nodes for Precision Farming
Adviser: MD Shaad Mahmud

Nathanael Frisch
Computer Engineering
Anushreeya Gurung
Analytics and Data Science
Daniel McCarthy
Computer Science
Samuel Mercer
Chemical Engineering
Wireless Data Processing System for Localized IoT-Enabled Device Networks
Adviser: Alexandra Contosta
Joseph Macedo  
Evan Rodgers  
Computer Science  
Andrew O’Neil  
Pranav Prasad  
Information Technology  
Project Pathways  
Adviser: David Benedetto  

Kajalben Patel  
Joseph Rabideau  
Zehua Zhang  
Information Technology  
USS Albacore Remote Learning Applications  
Adviser: David Benedetto  

Brendan Therrien  
Computer Science  
NextStep Mobile App  
Adviser: David Benedetto  

Tiancheng Liang  
Yulin Yang  
Yang Ye  
Computer Science  
Linkai Liang  
Computer Engineering  
Natural Language Processing Development  
Adviser: David Benedetto  

Yingjie Ma  
Computer Science  
Using IPMs to Model Tree Growth in the White Mountain National Forest  
Adviser: Marek Petrik  

Dylan O'Keeffe  
Analytics and Data Science  
Kevin Rhoades  
Computer Science  
Derek Riccardi  
Computer Science  
Analyzing Storm Events Impact on Rivers  
Adviser: Laura Dietz  

Colin Small  
Computer Science  
MMS SITL Ground Loop: Automating Spacecraft Data Selection  
Advisers: Matthew Argall, Marek Petrik  

Xueliang Chen  
Yuhui Wu  
Information Technology  
Garrick Craft  
Computer Science  
Protocol Performance Testing Automation  
Advisers: Radim Bartos, David Benedetto, Matthew Plumlee  

Aurora Desmarais  
Jordan Felt  
Uri-Jaun Hall  
Computer Science  
CO2 Sensor Software  
Adviser: David Benedetto  

Ezekiel Emstad  
Quinlan Graham  
Stephen Horn  
Computer Science  
Space Weather Follow-On MAG Flight and Ground Software  
Adviser: Matthew Argall  

Jackson Lucier  
Duncan McInnes  
Information Technology  
Garrett Smith  
Business Administration  
Network Probe Monitor  
Adviser: David Benedetto  

Earth Sciences  
Group Leader: Thomas Lippmann  

Cynthia Bova  
Earth Sciences  
Modeling the Fate and Transport of Carbon Constituents in a Subarctic Watershed in Northern Sweden  
Adviser: Ruth Varner  

Brittani Chapman  
Earth Sciences  
Investigation of New England Forest Biometrics Utilizing Airborne LiDAR Data  
Adviser: Michael Palace  

Benjamin Cotton  
Earth Sciences  
The Role of Bioavailable Dissolved Organic Nitrogen Cycling at Station ALOHA in the Subtropical North Pacific Ocean  
Adviser: Robert Letscher
Angelica Dziurzynski  
Earth Sciences, Marine, Estuarine and Freshwater Biology  
The Impact of Sedges on Belowground Methane Concentration and Diffusion in a Temperate Peatland  
Adviser: Ruth Varner

Trevor Fenoff  
Earth Sciences  
An Analysis of River Channel Change over Time in the Lamprey River  
Adviser: Anne Lightbody

Jessica Gray  
Earth Sciences  
The Effect of Temperature on Primary Productivity Trends in the Global Ocean  
Adviser: Robert Letscher

Peter Haber  
Earth Sciences  
Magnetostratigraphy of Paleogene Deposits in Coastal San Jorge Basin and Implications for South American Land Mammal Ages  
Adviser: William Clyde

Quinton Hazard  
Earth Sciences  
Monitoring Cape Cod’s Changing Shoreline  
Adviser: Michael Palace

Quinton Hill  
Earth Sciences  
Remotely Sensed Seasonal Traces of Bedrock Contributions to Stream Chemistry in Hubbard Brook, NH  
Advisers: Julia Bryce, Michael Palace

Cooper Mattheu  
Earth Sciences  
Relative Abundance of Phytoplankton in Surface Waters of the Mid-Atlantic  
Adviser: Liz Harvey

Connor Melican  
Earth Sciences  
Analysis of Urban Heat Flux in Durham, NH  
Adviser: Katharine Duderstadt

Laura Spring  
Earth Sciences  
Evaluating the Relationship between Seismicity and Crustal Uplift Rates across the Southeastern Sector of the Laurentide Ice Sheet  
Advisers: Joel Johnson, Joseph Licciardi

### Electrical Engineering

#### Group Leader: Wayne Smith

**Alhussein AL-Jawad**  
Electrical Engineering  
Multi-Band Electromagnetic Field Interference  
Adviser: Kent Chamberlin

**Ranuli Abeysinge**  
Electrical Engineering  
Free Space Optics Audio Channel  
Adviser: Nicholas Kirsch

**Michael Bahrs**  
**Kevin Healey**  
**Nicholas Skinner**  
Electrical Engineering  
3-D Lidar Mapping System  
Adviser: Se Young Yoon

**Owen Baillargeon**  
**Samuel Goudreault**  
**John Ward**  
Electrical Engineering  
PMU SCADA Design  
Adviser: Nicholas Kirsch

**Kyle Beaupre**  
Electrical Engineering  
Dual-Axis Solar Tracker  
Adviser: Edward Song

**Dylan Brown**  
**Simon McIntosh**  
Electrical Engineering  
Chinghei Cheng  
**Larry Nguyen**  
**Timothy Vigliotte**  
Computer Science  
**Colin Daly**  
**Jonathan Ellis**  
**Jaiden Evarts**  
**Connor Fleury**  
**Aiden Moore**  
**Dylan Russell**  
Mechanical Engineering  
**Navswarm**  
Adviser: May-Win Thein

#### Allen Burnett

Matthew Ladd  
Electrical Engineering  
EARS  
Adviser: John LaCourse

Whitman Carroll  
Patrick Conroy  
Electrical Engineering  
Lunabot Project  
Advisers: John LaCourse, May-Win Thein

Brian Coffen  
Electrical Engineering  
Wireless Wearable Triage and Health Monitoring Device for MCIs and First Responders  
Adviser: MD Shaad Mahmud

Matthew Dodge  
Electrical Engineering  
Modeling the UNH Microgrid  
Adviser: Nicholas Kirsch

Joseph Eichelser  
Wing Kiu Jiang  
Electrical Engineering  
Project MANTARAY  
Advisers: May-Win Thein, Qiaoyan Yu

Tanner Fortier  
Electrical Engineering  
Simulation of Ethernet Link Partner at 10Mb/s over a Single Twisted Pair  
Adviser: Richard Messner

Jennifer Hargenrader  
Electrical Engineering  
Solar-Powered Aquaponics System  
Adviser: Se Young Yoon

Kevin Healey  
Electrical Engineering  
Object Detection and Classification with 3-D Lidar Mapping System  
Adviser: Se Young Yoon

Bartlett Hooper  
Andrew Nguyen  
Christian Talmo  
Jeffrey Wansley  
Electrical Engineering  
QuadX Swarm  
Advisers: May-Win Thein, Se Young Yoon
Charity Reed  
Electrical Engineering  
*In-Home Data Collection for Experiments with Human Participants*  
Adviser: Andrew Kun

Matthew Serpis  
Electrical Engineering  
*Personal Hydroponics System for Home Use*  
Advisers: John LaCourse, Wayne Smith

Ujan Talukdar  
Electrical Engineering  
*SDR Machine Learning Approach to Classifying Wireless Signals*  
Adviser: Nicholas Kirsch

Eric Zuchowski  
Electrical Engineering  
*15-Watt Solid State Guitar Combination Amplifier*  
Adviser: Wayne Smith

### Innovation Scholars

**Group Leader:** Timothy Carlin

Christian Baduria  
Computer Science

Mason McDonald  
Computer Science

Alec Damsell  
Statistics  
*Autonomous Long-Range Aerial Data Collection for Environmental Surveys*  
Adviser: Timothy Carlin

Aaron Bateman  
Mechanical Engineering

Ryan Tripp  
Mechanical Engineering

Christopher Bui  
Bioengineering

Jasmine Ho  
Bioengineering

Sophia Pettit  
Undeclared  
*Soft Robotics: Soft Wheel Robot*  
Adviser: John LaCourse

Kaiden Bedell  
Mechanical Engineering

Arielle Kotulak  
Chemical Engineering  
*Assessing the Influence of Climate on NH Sugar Maple Syrup Quality*  
Adviser: Alia Lesnek

Julia Bowman  
Environmental Engineering  
*Heidi Bucking*  
Marine, Estuarine and Freshwater Biology  
*Measuring Road Salt Concentrations in Water Bodies around UNH*  
Adviser: Alia Lesnek

Philip Breton  
Civil Engineering  
*Kathryn Carlson*  
Chemical Engineering  
*Alexis Eaton*  
Environmental Engineering, Sustainability  
*Katie O’Brien*  
Environmental Engineering  
*Water Quality Sensor for Coastal Structure Analysis*  
Advisers: Savannah DeVoe, Diane Foster

Jackie Genthner  
Chemical Engineering  
*Amy Prendergast*  
Electrical Engineering  
*Gavin Smith*  
Engineering Physics  
*Optimal Weight-to-Strength Analysis of 3-D Printed Scalable Wind Turbines*  
Adviser: Mason Bichanich

Evan Goodale  
Ocean Engineering  
*Camden Guay*  
Statistics  
*The Formaldehyde Slide: Monitoring Air Quality at UNH*  
Adviser: Alia Lesnek

Tyler Johnson  
Bioengineering  
*Jackson Perkins*  
Ocean Engineering  
*Jane Schwadron*  
Ocean Engineering  
*Steven Wilson*  
Mechanical Engineering  
*Research and Design of Wave Rider Buoy for Collecting Wave Data in Hampton, NH*  
Advisers: Savannah DeVoe, Diane Foster

Philip McKendall  
Electrical Engineering  
*Jackson Morrissey*  
Mechanical Engineering  
*Diabetic Alert Wearable*  
Adviser: Madhav Baral

Garrett King  
Sara Overhulser  
Sriyam Rimal  
Computer Science  
*Gauging Music Popularity with Chord Progressions*  
Adviser: Timothy Carlin

### Mathematics

**Group Leader:** Michelle Capozzoli

Sophia Brisard  
Applied Mathematics  
*Anomaly and Fraud Detection in Campaign Finance Data*  
Advisers: Tama Andrews, John McClain

Danielle Curtin  
Statistics  
*Project ECHO and the Confidence of Treatment for Patients with Substance Use Disorder*  
Adviser: Michelle Capozzoli

Julia Fitzgibbons  
Mathematics  
*Parameter Estimation for Epidemic Modeling*  
Adviser: Adam Boucher

Christopher Manseau  
Mathematics  
*K-Stage Euclidean Behavior of Coordinate Rings of Algebraic Curves*  
Adviser: Edward Hinson

Russell Miles  
Applied Mathematics  
*Machine-Learning Classification of Two-Dimensional Objects Using Reflected Waveforms*  
Adviser: Mark Lyon
Mechanical Engineering — Competition and Club Teams

Group Leader: Alireza Ebadi

Marc Akouri
Jonathon Amrein
Dennis Codling
Patrick Gillis
Peter Hunt
William Lauzon
Joseph Mroz
Zachary Rossi
Nathan Stegman
Whitman Carroll
Patrick Conroy

Electrical Engineering
Ran Chen
Han Jintong
Tao Zhang
Computer Science
LunaBot Team
Adviser: May-Win Thein

Patrick Anderson
Jarrod Arruda
Sawyer Banley-Bill
Jacob Dow
John Gallo
Nelson Kim
Justin Lomba
Thomas Miller
Sungjoon Shinnishi
DJ Simoneau
Cooper Spaulding
David Swan
Timothy Ziadeh
Mechanical Engineering
Precision Racing Team
Adviser: Todd Gross

Secundino Baldonado
Grace Johnston
Alex Lumbert
Matthew Porter
Ross Thyne
Alice Wade
Mechanical Engineering
Kang-Li Chen
Mechanical Engineering
UNH Students for the Exploration and Development of Space
Adviser: Todd Gross

Noah Bonneau
Brandon Hanson
Timothy Underhill
Computer Science
Matthew Bowring
Griffith Comtois
Samuel Cranford
Patricia Goodwin
Colleen Kelly
Devon Kraemer-Roberts
Shane Monahan
Mechanical Engineering
Bartlett Hooper
Andrew Nguyen
Christian Talmo
Jeffrey Wansley
Electrical Engineering
QuadX Swarm
Adviser: May-Win Thein

Thomas Cote
Matthew Dostie
Divyamsh Nepal
Derek Ramsey
Ryan Suttmeier
Matthew Weaver
Andrew Williams
Mechanical Engineering
2021 UNH Mini Baja Team Design
Adviser: Todd Gross

Jonathan Ells
Mechanical Engineering
ET-NavSwarm
Adviser: May-Win Thein

Garrison Fenner
Mohammed Raouf
Oscany Rodriguez-DeJesus
Mechanical Engineering
Hypertherm Plasma Arc Cutting
Experimental Set Up and Analyses
Adviser: Brad Kinsey

William Girard
Tristan Herbert
Isaac Mathewson
Jeremy Rescott
Samuel Twombly
Mechanical Engineering
Hypertherm Plasma Cutter Automatic Consumable Changer
Adviser: Brad Kinsey

Samuel Kierstead
Michael Piessens
Mechanical Engineering
Power-Assisted Hand Cycle for People with Physical Disabilities
Adviser: Iyavlo Nedyalkov

Jason Landolt
Yinghao Zhai
Mechanical Engineering
U.S. Navy: NAVAIR Unmanned Drone Thermal System Controller
Advisors: Charles Klewicki, Christopher White

Curtis Linton
Kathy Robbins
Laura Stanieich
Maria Virga
Mechanical Engineering
Distributed Cyber Manufacturing Case Study
Advisers: Jinjin Ha, Brad Kinsey, Elizabeth Mamros

Quinn Parker
Cole Schoonover
Mechanical Engineering
NEMO Equipment: Measuring Dynamic Response of Tent Pole Architecture
Adviser: Todd Gross

Ariana Schmidt
Devony Whiting
Mechanical Engineering
Modular Wheelchair Levers
Adviser: Iyavlo Nedyalkov

Mechanical Engineering — Industry

Group Leader: Alireza Ebadi

Michael Clemente
Bryce Desmarais
Cole Dunajski
Mechanical Engineering
LOONS
Adviser: Christopher White

Matthew Dunbar
Timothy Morris
Jackson Tarrant
Mechanical Engineering
Hutchinson Material Handling in Robotic Manufacturing Cell
Adviser: Alireza Ebadi

2021 UNDERGRADUATE RESEARCH CONFERENCE • 37
**Mechanical Engineering — Research**

Group Leader: Alireza Ebadi

Ali Al-Jewad
Nathan Daigle
Sohani Demian
Jordan Hoffman

Giovanni Guglielmi
Environmental Engineering
*LIFE CYCLE ENVIRONMENTAL AND ECONOMIC COMPARISON OF WATER DROPLET MACHINING AND TRADITIONAL ABRASIVE WATERJET CUTTING*

Advisers: Brad Kinsey, Weiwei Mo

Ali Al-Jewad
Nathan Daigle
Sohani Demian
Jordan Hoffman

Giovanni Guglielmi
Environmental Engineering
*TRaverse System for Water Droplet Machining*

Advisers: Brad Kinsey, Weiwei Mo

Abdulla Alradhi
Faisal Binsalma
Max Bundesmann

Mechanical Engineering
*REAL TIME ACTIVITY AND WEIGHT OF DESERT MICE*

Advisers: Dani Blumstein, Anthony Puntin

Hunter Cini
Davis Cole
Jaden LaRoche
Rachael Martinez

Mechanical Engineering
*CLASSROOM VENTILATION METHODS TO PREVENT PARTICLE TRANSFER*

Advisers: Todd Gross, Ivaylo Nedyalkov

Donovan Corless
Hui Jin
Kevin Yeung
Yu Zhou

Mechanical Engineering
*ACOUSTIC STREAMING HEAT PIPE*

Adviser: Christopher White

Scott Franco
Thomas Mason
Mechanical Engineering
*DESIGN OF A ONE-HANDED BIKE PUMP*

Adviser: Todd Gross

Curtis Linton
Mechanical Engineering
*MITIGATING THE LATERAL MIXING OF AEROSOLS USING COMPUTATIONAL FLUID DYNAMICS*

Adviser: Todd Gross

Noah Payeur
Zifeng Qiu
Mechanical Engineering
*FIXTURING FOR DOUBLE-SIDED INCREMENTAL FORMING MACHINE*

Advisers: Jinjin Ha, Brad Kinsey, Elizabeth Mamros

Devin Roderick
Mechanical Engineering
*MICROGRAVITY PLYOMETRIC EXERCISE MACHINE*

Adviser: May-Win Thein

Jessie Barker
Vincent Dejana
Amanda Anderson
Matthew Radzelovage
Richard Randall
Mechanical Engineering
Benson Cao
James Kahn
Hoe Hin Loh
Jeffrey Pitts
Jakob Velle
David Watson

Computer Science
Jenna Ehnot
Ocean Engineering
Joseph Eichler
Wing Kiu Jiang

Electrical Engineering
ASV/UUV/Robofish
Advisers: Michael Chambers, Elizabeth Fairchild, Yuri Rzhanov, May-Win Thein

Dakota Bouret
Rory Walsh
Ocean Engineering
Brian Thorne
Mechanical Engineering
*WAVE-POWERED WATER PUMP*

Adviser: M. Robinson Swift

Matthew Dowling
Sean Gillam
Magdalyn Kosalek
Michael Monahan
Jason Robidoux
Ocean Engineering

Derek Goulet
Mechanical Engineering
*EFFICACY OF BUBBLE SCREENS ON TURBIDITY CONTROL*

Adviser: Tracy Mandel

MacLane Keohane
Thomas Spiro
Ocean Engineering
*CHARACTERIZING TIDAL CURRENT STRUCTURES IN THE PISCATAQUA RIVER WHILE MONITORING ESTUARINE HEALTH*

Advisers: Patrick O’Byrne, Martin Wosnik

Ocean Engineering
Group Leader: M. Robinson Swift

Rachel Barden
Garrett Frohman
Olivia Luthringer
Ocean Engineering

Haley Fong
Emma Kross
Marine, Estuarine and Freshwater Biology
*COMPOSITE LINES FOR KELP AQUACULTURE*

Adviser: M. Robinson Swift
Physics — Experimentation and Investigation

Group Leader: Ningyu Liu

Kelly Bisson
Jeffrey Campbell
Hanyu Jiang
Alex Chesley
Jeffrey Grant

Mechanical Engineering
Design and Modeling for the IMAP Student Collaboration CubeSat
Advisers: Jason Legere, Marc Lessard, Noe Lugaz

Lihy Buchbinder
Physics
Exploring the Effects of Tip Shapes on Tip-Sample Interactions for Scanning Tunneling Microscopy
Adviser: Shawna Hollen

Shawn Cawley
Engineering Physics
Rogowski Coil: Damping with a Flux Feedback Circuit
Adviser: Matthew Argall

Grace Johnston
Mechanical Engineering
MAP-Lo Star Sensor Development and Calibration
Adviser: Harald Kucharek

Riley Powell
Engineering Physics
Design and Optimization of a Micron-Sized Bonding Technique for Electronic Measurements of 2-D Material Flakes
Adviser: Shawna Hollen

Lillian Soucy
Physics
Techniques for Dynamic Nuclear Polarization NMR Analysis
Adviser: Karl Slifer

Robert Wells
Engineering Physics
Plastic CUBESAT Chassis Design and Experimentation
Adviser: Amy Keesee

Amanda Wester
Physics
Transition Edge Sensor Microcalorimeters for ASCENT — A Superconducting Energetic X-Ray Telescope
Adviser: Fabian Kislat

Physics — Theory, Modeling, and Data Analysis

Group Leader: Ningyu Liu

Ben Campbell
Mathematics, Physics
Predicting Calabi-Yau Threefold Topology from the Kreuzer-Starke List of 4-D Reflexive Polytopes
Adviser: Per Berglund

Audrey Coleman
Physics
Assessing the Applicability of the Maximum Likelihood Method for LEAP Using COMPTEL Data
Adviser: Mark McConnell

Tan Dao
Physics
Correlation between Chiral Fluctuations and the Topological Hall Effect
Adviser: Jiadong Zang

Payson Dunn
Classics, Physics
Developing a Fractal Model of Electrical Discharge Trees
Adviser: Ningyu Liu

Isabella Householder
Physics
Statistical Study of Van Allen Radiation Belt Electron Precipitation during Satellite Conjunctions at Low Earth Orbit
Adviser: Chia-Lin Huang

Anastasia Marchuk
Physics, Russian
Low Frequency Waves Due to Newborn Interstellar Pickup He+ Observed by the Ulysses Spacecraft
Adviser: Charles Smith

Nathan Richard
Physics
Investigating Fast Breakdown in Lightning Narrow Bipolar Events
Advisers: Ningyu Liu, Julia Tilles

Collin Stevenson
Engineering Physics
Dynamic Contact Angle in OpenFOAM
Adviser: Ivaylo Nedyalkov
Peter T. Paul College of Business and Economics First-Year Innovation and Research Experience (FIRE) URC

Poster Presentations & Oral Presentations

Saturday, May 1
FIRE is an integrated, team-based, and game-like experience for first-year Paul College students. Through a series of challenges, students develop business plans that are presented at this year-end finale, which features poster and oral presentations on students’ business plans and concludes with a “Grand Challenge Round.”

Grand Challenge: Bio Tech

Team: 7 Cool Ranch Doritos
Adviser: Spencer Coveney
Daniel Alissi
Delaney Cunningham
Matthew Darby
Philip Herman
Maggie Keenan
Max Kunesh
Nicholas Luneau
Gavin O’Hara
Ciera Schwarzer
Jacob Stewart
Business Administration
Alexander Bernhard
Taylor Burgess
Steven Huang
Margaret Lahey
Eliza Liponis
Emily Lynch
Undeclared

Team: Seal Eyes
Adviser: Zachary Merian
Eric Anderson
Danielle Baker
Derek Bobbitt
Ethan Brennan
Samuel Eggimann
Sheila El-Azem
Ryan Luis
Maeghan McGraw
Kyle Miller
Oliver O’Keefe
Haley Ott
Sophia Pagliazzo
Jason Patterson
Theo Pearson
Luke Stradley
Jonathan Willeman
Business Administration
Gabrielle Hayden
Nicholas Roscoe
Undeclared

Team: 24 Karat
Adviser: Marisa Labadini
Andrew Ariagno
Trinity Birmingham
Dominic Cavanagh
Gregory Davis
Daniel Gottschalk
Jared Jessemh
Lauren Kirby
Avery Langone
Evan LeBlanc
Cameron McGill
Ryan Santosuosso
Business Administration
Hailey Bartini
Scott Cavan
Matthew Darwin
Alex Hughes
Undeclared

Team: It’s In the Bag-arella
Adviser: Joseph Bagarella
Jessica Andrews
Madison Burns
Alexa Gillett
Nicole Kinzmaier
Andrew Milroy
Lillian Murray
Graham Pogue
Jadyn Raftery-Smart
Erin Reilly
Joseph Shepard
Emily York
Business Administration
Gabrielle Johnson
Kobie Taylor
Undeclared
Emilee Martin
Hospitality Management
Jacob McGuire
Economics

Team: 20Money
Adviser: Sophia Mazzarelli
Jacob Buban
Nathan Bussone
Carley Dahlstrom
Gabriella Fabiszewski
Jack Flanagan
Andria Loiacono
Olivia O’Connor
Elodie Poussard
Joseph Reagan
Todd Richardson
Aidan Rolfe
Gianna Salvi
Business Administration
Quinn Doherty
Regan Doody
Michael Leahy
Ian Miles
Julia Saab
Stuart Standish
Christopher Thorne
Undeclared
**Grand Challenge: Environment**

**Team: BobsCats**
Adviser: Robert Horgan
Emily Alberigo
Paige Cote
Cole Giannasca
Jarrett Hayes
Marly Johnson
Brendan Kelly
Finnbarr Kiernan
Anna Kovacs
Emma LaRoche
Glenn Lewis
Zachary Menard
Nicholas Tucci
Michael Ziv
Business Administration
Joshua Hoffman
Colleen Simpson
Abriana Teodoro
Undeclared

**Team: Zero-Dark-30**
Adviser: Kelsie Dawe
Cameron Allen
Joseph Cammarata
Grace Clark
George Clarke
Evan Deary
Isabel Gayarre
Adam Julian
Morgan Kahn
Brianna Legros
Jackson O’Connell
Anthony Sanville
Alexys Wheeler
Business Administration
Matthew Galley
Trevor Goding
Allison Ivers
Jacob Martin
Undeclared

**Team: GR8**
Adviser: Eleanor Johnston
Andrew Arnoldo
Eric Chase
Conor Considine
Makenzie Gagne
Mitchel Gagnon
Lucas Mathieu
Rowena Murphy
Trevor Santoro
Maiah Seul
Zachary Steere
Logan Talanian
Business Administration
Jonathan Borsari
Sarah Carroll
James Kosiariski
Mariah Sanborn
Undeclared

**Team: Fuego Four**
Adviser: Ivy Gogolin
Cameron Avila
Michael Picciuto
Dawson Samperi Dubois
Ethan Silvestri
Samuel Tynan
Undeclared
Emily Bini
Thomas Carpenter
Linda Freeman
Tucker Guard
Toby Helton
Avery Joensuu
AJ Maalof
Ashley Martin
Benjamin Perkins
Jacob Rotker
Kendra Zarnofsky
Business Administration
Cole Keegan
Finance

**Team: Hannah’s Holiday Carroll’s**
Adviser: Hannah Carroll
Thomas Berthasavage
Rebecca Camire
Alaina Dacko
James Hanlon
Matthew Marsico
Maximus Pellegrini
Louis Preston
Brendan Reagan
Devin Rooney
Savannah Schoonmaker
Bailey Shippee
Adrian Sutton
Calvin Todd
Jack Wheeler
Business Administration
Jacob Calamar
Reilly Landry
Undeclared

**Team: Team Robinhood**
Adviser: Robert Andreason
Michael Capodanno
Liam Conery
Jake Coppola
Maggie Johnson
Charlotte Johnson
Alec Lawry
Jennifer Lawton
Samantha Meredith
Jack St. Sauveur
Business Administration
Kiley Collins
Myles Kierstead
Caroline McCarthy
Undeclared
Grand Challenge: Sports

Team: 21 Savages
Adviser: Lauryn Cappuccio
Mody Abdel-Salam
Yannick Bright
Colin Caridi
Nolan Duffy
Benjamin Errington
Carolyn Garofoli
Jack Needham
Linnea Piper
Cameron Plona
Lucas Ragusa
Joanna Romneos
Cade Ronan
Olivia Secontine
Zachary Shaw
Undeclared

Team: The Wolves of PAUL Street
Adviser: Molly Richardson
Andrew Abirached
Reagan Calcari
Madison Davine
Brandon Dickinson
Gregory Fallon
Kyle Morfis
Kaitlyn Silva
Julia Tully
Business Administration
Daniel Craven
Ada DiYenno
Sean Hanrahan
Brody McAndrew
Evan Pescosolido
Declan Smith
Jack Waldo
Undeclared

Team: Ser10us Business
Adviser: Jordan Sardo
Nicolette Allen
Owen Henderson
Joseph Perfilio
Undeclared
Michael Bardsley
Alesandra Bedard
Tyler Brang
Spencer Cheney
Jack Duffin
Margaret Gerard
Tommy Langlois
Emily Milton
John Page
Abel Ravencraft
Cam Rosnov
Business Administration
Jillian Cookingham
Economics
Cole Fuller
Analytical Economics, Educational Studies

Team: ON F1RE
Adviser: Jared Bjornberg
Brandon Antinori
Angelina Bisson
Drew Blackwell
Anastasia Campe
Erica Cao
Matthew Gallant
Jeremy Mitchell
Nicholas Nadeau
Angelo Nicolosi
Kyle Vallee
Edyn Winter
Business Administration
Jocelyne Bisson
Mason Davis
Olivia Harper
Duncan Moreland
Maggie Peterson
Alexander Russo
Undeclared

Team: Team 31
Adviser: Hannah Carroll
Matthew Armata
Ryan Buxton
Madison Corgan
Benjamin Gardiner
Caroline Hoff
Christopher Karras
Michaela Lawyer
Isabella LoRusso
Shane Malcolm
Jackson Nichols
Ashley Phillips
Garrett Smith
Andrew St. Martin
Matthew Wilkins
Business Administration
Melanie Baillargeon
Molly Colasanti
Molly Hill
Katie Smith
Undeclared
Laura Earle
Economics

Team: Pac12
Adviser: Anthony Tamposi
Madeline Beaton
Charlotte Butterfield
Alexander Cafaro
Sydney Daley
David DeMello
Radames Gonzalez
Emma Jayne Hardin
Jack Hennings
Cameron Lee
Jimmy Lin
Natalie Ouellette
Kyle Pinard
Emmett Roy
Olivia Surdam
Business Administration
Garrett Chu
Sean Demarkis
Grace Harbour
Colby Travis
Undeclared
Team: BLA23
Adviser: Johanna Rewucki
Shane Cassidy
Jason DeSilva
Cameron Gendron
Nick Patti
Emma Ressler
Carsen Richards
Kevin Russell
Noah Shatzer
Andrew Trogler
Lea Wenaas
Christopher Wilkins
Business Administration
Anne-Marie Maughn
Will Shoemaker
Cooper Smith
Evan Stanley
Undeclared

Grand Challenge: Supply Chain

Team: Team Titanium
Adviser: Gabrielle Sott
Stav Alkalay
Economics
Matthew Befford
Will Caraccio
Abigail Ferullo
Damian Flynn
Oren Gabay
Malachi Gaunya
Joseph Jusseaume
Zack Leduc
Wylie MacDougall
Andrew Madden
Elisabeth McLaughlin
Owen McNeil
Emma Pixley
Undeclared

Team: DRA9ONS
Adviser: Angela Moquin
Max Anderson
Rylee Bresnahan
Chloe DeLuca
Noah Diep
Nicholas Kiah
Kyle Murphy
Collin Murphy
Avarose Scavio
Catrina Touchette
Brian Weston
Business Administration
John Giuliano
Matthew Lampert
Ian Lidster
Jack Meehan
Samuel Patterson
Luke Piers
Undeclared

Team: Drew’s Cruise
Adviser: Andrew Siemering
Madison Baggs
Kim Fuller
Jake MacInnis
Carson Swift
Courtney Vincent
Christopher Womelsdorf
Business Administration
Casey Byrne
Luke Curtis
Anna Glenn
Alexander Gray
Ryan Maki
Sean McIntyre
Alyson Mooney
Gregory Schaefer
Connor Trenholm
Undeclared

Team: EL17ES
Adviser: Ian Bushnell
Alexandra Asprogiannis
Michael Dutton
Caleigh Patterson
Undeclared
Jacob Emerson
Madeleine Hungerford
Thomas Keegan
Victoria Kennedy
Zack Klidaras
Jack Leahy
Christina Merchant
Jared Morrison
Joseph O’Brien
Benjamin Pitts
David Roos
Nicholas Roy
Sydney Scali
Logan Wahrenberger
Business Administration
Team: The Great 28
Adviser: Steven McKeen
Anna Bergeron
Jeremy Forman
Christopher Hatfield
Undeclared
Daisy Burns
Thomas Carolan
Devlin Costa
Samuel Gobeil
Eric Griffin
Conner MacCini
Owen Miller
Economics
Natalia Grasso
Fazla Karim
Brandon Murphy
Business Administration
Johanne Nichols
Finance

Team: Scuba Squad
Adviser: Sophia Hughes
Leon Bester
Ashlynn Hatch
Alex Vercolen
Ayrika West
Undeclared
Nicholas Cafarelli
Gina Carpinito
Julia Davis
Cameron Dolbec
Bella Dziak
Richard Hussey
Nikolai Jenson
Ryan Johnston
Garon Kelley
Liam McCoy
Shea Philbrook
Kailee Still
Danny Sweetland
Samuel Thurston
Aidan Vostrovsky
Anthony Zeissig
Business Administration

Team: Seal Team 6
Adviser: Jenna Peterson
Axel Barreto Rodriguez
Jake Beatty
Kaitlin Collins
Christopher Dawe
Thomas Flanagan
Chase Gagnon
Carolyn Hoadley
Shane MacLaughlin
Jack McCarty
Joshua McInerney
Elizabeth Nichols
Michael Paulauskas
Zachery Priestley
Business Administration
Connor Claypoole
Nicholas Muzi
Undeclared

Grand Challenge: Travel and Tourism

Team: Dream Team 16
Adviser: Ann-Marie Kolberg
Alexander Barouxis-Kroll
Chloe Coldwell
Christopher Donaghey
Oliver Jacques
Whittaker Sanborn
Undeclared
Logan Brown
Jack Colby
Henry DiNapoli
Michael Foohey
Maria Jacques
Olivia LaRose
Braden LaSpisa
Delaney McGann
Hayley Oliver
Patrick Yudkin
Business Administration
Jason Carney
Finance

Team: I Got 25 Problems but Winning Ain’t One
Adviser: Yanni Kakouris
Alex Behling
Tyler Bourget
Michael Burgess
Sara Carleo
Addison Craven
Ashley Gallant
Keri Hodgkinson
Aidan Hughes
Keith Huska
Richard Markwarth
Nickolas Merchant
Thomas Murawski
Sophia Newman
Business Administration
Nathaniel Gould
Rachel Poston
Undeclared

Team: Team 14 Hospitalitybees
Adviser: Jamie McGee
Hannah Collette
Camryn Copp
Adriana DeSimone
Alexander Durant
Olivia Ena
Davan Hanley
Mairead Hussey
Libby Moreau
Audrey O’Keefe
Jillian O’Malley
Kerstin Surrette
Hospitality Management
Sofia DeSimone
Undeclared
Bridget Lenahan
Hospitality Management, Spanish
Team: TGI Firedays
Adviser: Sarah Wilkinson
Brooke Conroy
Sarah Glennon
Olivia Graves-Weatherell
Caroline LeBlanc
Braden McDonnell
Peder Preststulen Nersnaes
Hanlon Paul
James Schneider
Alexandra Stuessi
Analytical Economics
Sarah Craft
Cooper Hamel
Thomas Nolan
Ryan Quinn
Tim Sicard
Undeclared
Dylan Driscoll
Brett Limric
KJ McClurg
Neil Politano
Nicholas Walter
Business Administration

SATURDAY 5/1, WEDNESDAY 5/5, THURSDAY 5/13

Peter T. Paul College of Business and Economics
Paul J. Holloway Prize
Innovation to Market Competition

Championship Round

Thursday, May 13
This competition takes students out of the classroom and into the real world. Students are required to research and prepare strategies for commercializing new products and services, which they present to a panel of industry judges. Prizes are awarded for the most feasible and fundable approaches for starting, acquiring, or expanding a business venture.

Languages, Literatures, & Cultures (LLC) Department
Undergraduate Research Conference

Thursday, May 13
The Department of Languages, Literatures, and Cultures (LLC) hosts an undergraduate research conference comprised of oral and poster presentations.

Audrey Bello
Neuroscience and Behavior
Questioning the Necessity of Revenge
Adviser: Scott Weintraub

Sandra Black
Social Work, Spanish
La Representación Cinemática de la Delincuencia Juvenil durante la Crisis Económica de España
Adviser: Jaume Marti-Olivella

Charlotte Butterfield
Business Administration
The Femicide Epidemic in Nicaragua
Adviser: Lucia Montas

Michael DeSisto
Biochemistry, Molecular and Cellular Biology
Chile: The Search for Justice
Adviser: Scott Weintraub

Ella Dudley
Economics, Finance
Pinochet as an Example of the Violations of Human Rights
Adviser: Scott Weintraub

Jude Everett
Spanish
The Performance of Grief in “Temporada de Huracanes” de Fernanda Melchor
Adviser: Lori Hopkins

Wyatt Garrett
Civil Engineering
A Case of Legalization: Drug Policy in Uruguay
Adviser: Scott Weintraub

Sierra Kehoe
Earth Sciences
Art as Protest and Reflection
Adviser: Scott Weintraub

Bridget Lenahan
Hospitality Management, Spanish
Art Produced from the Nicaraguan Contra War
Adviser: Lucia Montas

Kari Malatak
Homeland Security, International Affairs
The Banality of Violence: Genocide, Terror, and the Concept of Evil in Latin America
Adviser: Scott Weintraub

Christopher Manseau
Mathematics
Exploring the Role of Mathematics in Juan Luis Martínez’s “La Nueva Novella”
Adviser: Scott Weintraub

Ann Manchester Kelley Nursing Inquiry Day

Wednesday, May 5
This event features scholarly presentations by undergraduate Honors students and Graduate Program students in Nursing.
Aubrey Porter
Psychology
Helping Transgender Latinxs Immigrants through Art Therapy
Adviser: Mauricio Pulecio-Pulgarin

Anna Roberge
Human Development and Family Studies
Governmental Accountability: Leading Attribute of Closure
Adviser: Scott Weintraub

Alexandra Vergara
English Teaching
Identity and Belonging for Latinx Students in New England
Adviser: Lucia Montas

Hunter Wells
Computer Engineering
The Path to Accountability in Guatemala
Adviser: Scott Weintraub

Lindsey Wood
Spanish
Adaptaciones del Testimonio: Nuevas Perspectivas de la Frontera entre México y los Estados Unidos
Adviser: Lori Hopkins
Acknowledgments

The UNH Undergraduate Research Conference has grown to become a signature event at the University and one of the largest and most diverse conferences of its kind. Bringing the URC to fruition each year is the result of a collaborative network of many community members across campus. Here, we acknowledge these individuals and campus units and thank them for helping to make the virtual 2021 URC happen.

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Office of the Provost & VP for Academic Affairs
Office of the Senior Vice Provost for Academic Affairs
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Hamel Center for Undergraduate Research
UNH Academic Technology
UNH Advancement
UNH Admissions
UNH Communications and Public Affairs (CPA)
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UNH Earth Systems Research Center IT
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UNH Web and Mobile Development
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Institute for the Study of Earth, Oceans, and Space (EOS)
Jack and Pat Weeks Fund
Paul and Anna Grace Holloway
Peter T. Paul College of Business and Economics
UNH Information Technology (IT)
UNH InterOperability Laboratory (UNH-IOL)

Thanks to the 2021 URC Planning Committee (as well as the many individuals who served on subcommittees):
Jason Boucher, Social Media Manager, CPA
Szu-Feng Chen, Co-Chair, Naked Arts; Associate Professor, Theatre and Dance
Lauren Conley, Operations Manager, Advancement
Summer Cook, Associate Professor, Kinesiology
Meaghan Dittrich, Director, Connors Writing Center
Molly Doyle, Co-Chair, All Colleges Undergraduate Research Symposium; Administrative Director, Hamel Center for Undergraduate Research
Nora Draper, Associate Professor, Communication
Andrew Earle, Chair, Paul College Holloway Prize Competition; Assistant Professor, Strategic Management and Entrepreneurship
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Liz Fowler, Research and Instruction Services Coordinator, Dimond Library
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Sue Humphrey, Co-Chair, ISE Symposium; Administrative Services Specialist, CEPS Dean’s Office
Caroline Kanaskie, Co-Chair, Graduate Research Conference
Andrea LaBonte, Co-Chair, Paul College FIRE URC; Program Coordinator, Paul College
Eileen Laskoski, Co-Chair, Paul College URC; Marketing Events Manager, Paul College
Amanda Leger, Co-Chair, All Colleges Undergraduate Research Symposium; URC Coordinator, Hamel Center for Undergraduate Research
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Tom Payne, Co-Chair, Naked Arts; Associate Professor, English
Beth Potier, Manager, Research Communications and Outreach, CPA
Dan Reagan, Co-Chair, UNH Manchester URC; Associate Dean of Instruction, UNH Manchester
Chris Reardon, Professor, Political Science
Edward Reynolds, Lecturer, Communication

Sean Stewart, Co-Chair, Paul College FIRE URC; Assistant Director of Undergraduate Programs, Paul College
Paul Tsang, Faculty Director, Hamel Center for Undergraduate Research; Professor, Molecular, Cellular and Biomedical Sciences (MCBS)
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Wil Wolheim, Co-Chair, COLSA URC; Associate Professor, Natural Resources and the Environment
Mary Young, Co-Chair, UNH Manchester URC; Senior Project Manager, Office of the Dean, UNH Manchester

2021 URC Event Chairs/Co-Chairs:
Sachiko Akiyama and Ben Cariens, Senior B.A. & B.F.A. Exhibition
Tarah Beaupre and Lou Ann Griswold, CHHS Grimes Award Competition
Kristen Bradford and Kerry Nolte, Ann Manchester Kelley Nursing Inquiry Day
Daniel Chavez and Scott Weintraub, Languages, Literatures, and Cultures Department URC
Szu-Feng Chen, The Naked Arts—Creativity Exposed!
Willem DeVries, Philosophy Department URC
Molly Doyle and Amanda Leger, All Colleges Undergraduate Research Symposium
Andrew Earle, Paul College Holloway Prize Competition
Elisabeth Farrell, University-Wide Undergraduate Sustainability Research Symposium
Maureen Gillespie, Psychology Department George M. Haslerud URC
Tara Hicks Johnson and Sue Humphrey, Interdisciplinary Science & Engineering (ISE) Symposium
Delia Konzett, Honors English URC
Andrea LaBonte and Sean Stewart, Paul College FIRE URC
Eileen Laskoski and Melda Ormeci Matoglu, Paul College URC
Janet Polasky and Laura Simard, History Department URC
Dan Reagan and Mary Young, UNH Manchester URC
Pamela Wildes and Wil Wolheim, COLSA URC

Contributors:
Graphic Design: Christine Hodgson
Photography: Jeremy Gasowski
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<th>Student Index</th>
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