

Welcome!

Thank you for joining us at Providence College's 13th Annual Celebration of Student Scholarship and Creativity. After two years of virtual events, more than **150 students (75 projects)** – nominated by faculty from a wide range of academic disciplines – have prepared oral and poster presentations to showcase their wide-ranging research and creative work.

In many ways, this event encapsulates the very best of the Providence College academic experience – in-depth student research and creativity, faculty mentorship, and tangible outcomes. It also aligns seamlessly with the College's *PC200* Strategic Plan, which calls for us to provide every student opportunities to participate in high-impact educational practices, such as undergraduate research and creative work, under the tutelage of a faculty mentor. Simply put, the Celebration of Student Scholarship and Creativity is a three-day showcase of academic excellence that shines a light on our talented students.

I want to congratulate all the students on their achievements and reiterate my gratitude for all the faculty members who have provided their expertise and served as guides. These experiences will benefit our students for years to come.

Sincerely,

Sean F. Reid, Ph.D.

Provost & Senior Vice President for Academic Affairs

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The Center for Engaged Learning is honoring the incredible contributions Dr. Steve Mecca made to establishing and growing the culture of undergraduate research on our campus. Over his career, Dr. Mecca mentored hundreds of student researchers from a wide variety of disciplines. Notably, his students presented 73 projects at the Annual Celebration of Student Scholarship and Creativity over the past decade.

Continuing with tradition, projects reflecting one of the four themes that the late Dr. Steve Mecca was passionate about - Education, Health, Sanitation, and/or Technology - have been designated in his honor.

Tuesday, April 26

Oral Presentations

12:15 p.m.

Rebecca R. Farias '22G, History

Doe as Thou Wouldest be Done By: Mental Illness Relief Responses in Puritan New England

Faculty Mentor: Dr. Adrian Weimer, History and Classics

12:27 p.m.

Christine Sullivan '22, History and American Studies

Let Us March On: LaVilla, Florida, and the History of the Harlem of the South

Faculty Mentor: Dr. Alyssa Lopez, History and Classics

12:39 p.m.

Diraliz Cruz '23, Biology

*Metabolic rates of *Brachyponera chinensis*, from Rhode Island*

Faculty Mentor: Dr. James Waters, Biology

12:51 p.m.

Matthew Rock '23, Environmental Biology

The Evolution of Pollution Resistance in the Atlantic Killifish

Faculty Mentor: Dr. Jeffrey Markert, Biology

Poster Presentations (12 – 2 p.m.)

Lorenzo Battistoni '22, Biochemistry

Riley Hughes '23, Biochemistry

Progress Towards the Synthesis of Chiral Heterobiaryl Atropisomers via [2+2+2] Cyclotrimerization

Faculty Mentor: Dr. Seann Mulcahy, Chemistry and Biochemistry

Danika Bebe '23, Global Studies and Public and Community Service, Business and Innovation minor

Changes in the Devadasi Tradition

Faculty Mentor: Dr. Trina Vithayathil, Global Studies

Tiffany Berry '22, Biology and Psychology

Hope Tiboni, '22, Psychology and Health Policy and Management

A Holistic Approach to Combating Stereotype Threat In STEM Among Elementary Children

Faculty Mentor: Dr. Saaid Mendoza, Psychology

Alexandra Chaparro '22, Biochemistry

Parker Keller '24, Chemistry

Metal Complexes of Redox Active Ligands

Faculty Mentor: Dr. Maria Carroll, Chemistry and Biochemistry

Jackson DeMartino '23, Biochemistry

Lily Lockhart '22, Biochemistry

Kailey Paar '23, Biochemistry

Initial characterization of corticosteroid-metabolizing enzymes found in human gut bacteria

Faculty Mentor: Dr. Tyler Stack, Chemistry and Biochemistry

Jordan DeMoura '22, Mathematics

Lines on a Smooth Projective Surface

Faculty Mentor: Dr. Su-Jeong Kang, Math

Sarah Downey '24, Spanish/Secondary Education

Nothing Left to Give: Responding to Secondhand Trauma in K-12 Educators

Faculty Mentor: Dr. Comfort Ateh, Secondary Education

Grace Maffucci '22, Music Performance and Spanish

Lo AfroCubano: Exploring Afro-Cuban Culture in Music, Literature, & Art, Pre- & Post-Cuban Revolution

Faculty Mentor: Dr. Monica Simal, Foreign Language Studies

Caitlin McHugh '24, Environmental Biology and Economics

Gracey Sorensen '23, Biology

Effect of dietary protein on honey bee pollen foraging behavior

Faculty Mentor: Dr. Rachael Bonoan, Biology

Lisa McNamara '23, Global Studies, Black Studies and Business and Innovation Minor

Women's Cricket in India: THE P(L)AY GAP

Faculty Mentor: Dr. Trina Vithayathil, Global Studies

Olivia Moll '22, History

Terrible Terrell: The Forgotten Story of Carolyn Daniels

Faculty Mentor: Dr. Alyssa Lopez, History and Classics

Leigh Paradis '23, Biology and Neuroscience Program

*How social behavior and interactions scale with group size in *Drosophila melanogaster*.*

Faculty Mentor: Dr. James Waters, Biology

Angie Pierre '25, Global Studies

Race Films & American Society

Faculty Mentor: Dr. Alyssa Lopez, History and Classics

Alexa Pudlo '22, Environmental Biology

Building a reference collection of insect pollinators

Faculty Mentor: Dr. Rachael Bonoan, Biology

Christopher Walsh '23, Biology and Psychology

Hayden Lens '23, Biology

Morgan Kruzan '23, Biology

Isabella Glennon '25, Biochemistry

Courtney Caccia '22, Biology and Psychology

Differentiation and Maturation of Cerebral Organoids from APOE3/APOE4 Stem Cell Lines

Faculty Mentor: Dr. Chuck Toth, Biology

Wednesday, April 27

Oral Presentations

11:15 a.m.

Gabriel Capella '25, Political Science

Margaret Price '25, Global Studies and Political Science

Declan Kavanagh '25, Political Science and Marketing

Angie Pierre '25, Global Studies

Dante Garcia '25, Political Science

Daniel Cantera '25, History/Secondary Education

Christopher Capozzi '25, Marketing

Jolade Oshinkanlu '25, Psychology and Global Studies

Jade Mikalauski '25, Humanities and Mathematics

Wesley Stephens '25, Political Science

National Model United Nations NY 2022 Conference

Faculty Mentor: Dr. Jason McSparron, Political Science

11:27 a.m.

Brigid McEvoy '23, History and Spanish major, Business and Innovation and Latin American Studies minors

An Unread Colonial Diary

Faculty Mentor: Dr. Adrian Weimer, History and Classics

11:39 a.m.

Kara McCurdy '22, Health Policy and Management, Minor in Mathematics and French

Exploring the Relationship Between Healthcare Access and Cancer Diagnosis

Faculty Mentor: Dr. Candidus Nwakasi, Health Policy and Management

11:51 a.m.

Fiona Clarke '23, English

Destination, "The True Country:" The Significance of the Journey in Flannery O'Connor's Fiction

Faculty Mentor: Dr. Suzanne Fournier, English

12:03 p.m.

Catalina Betancur Velez '23, Political Science and Global Studies

Indigenous Movements in Colombia: Redefining Their Notion of Citizenship Through Social Demonstrations, Representative Groups, and Constitutional and Legal Reforms

Faculty Mentor: Dr. Casey Stevens, Political Science

12:15 p.m.

Katherine Kudla '24, Physics

The Baryonic Tully-Fisher Relation for Galaxies with Supernova Distances

Faculty Mentor: Dr. Joseph Ribaud, Engineering and Physics

12:27 p.m.

Katherine Burdick '22, History and Economics, Theology minor

The Power of Mothers: A Comparison of the Egyptian Goddess Isis and Virgin Mary During the Roman Empire Through Literature and Art

Faculty Mentor: Dr. Melissa Huber, History and Classics

Poster Presentations (11 a.m. - 1 p.m.)

Caitlin Ariel '24, Marketing

Abigail Gramer '24, Marketing

Charles Kannapell '24, Marketing

Jonathan LaDuke '24, Marketing

Peer Pressure and the College Experience

Faculty Mentor: Dr. Kevin Newman, Marketing

Adam Banatwala '22, Mathematics and Finance

Jensen Barry '22, Biology and Mathematics

Mackenzie Maude '22, Mathematics and Art History

Classifications of Transformations of $K^m \times T^n$ and $P^m \times T^n$ via Symmetry Groups

Faculty Mentor: Dr. C. Joanna Su, Mathematics and Computer Science

Tiffany Berry '22, Biology and Psychology

Courtney Caccia '22, Biology and Psychology

A patient-derived iPSC model to study glutamate deficiency by SHANK-3 Mutation in Autism Spectrum Disorder

Faculty Mentor: Dr. Charles Toth, Biology

Mia Giselle Binuya '22, Psychology and Spanish

Cassidy Molinare '22, Psychology and Spanish

Chernys DeLeon Henriquez '22, Finance, Spanish minor

Jonathan Montalvan '23, Computer Science and Spanish

Guillermo Thumann '22, Accountancy, Finance minor

Digitizing Spanish Classics: Golden Age Literature Glossary Online (GALGO)

Faculty Mentor: Dr. Alison Caplan, Foreign Language Studies

Alexander Cannon '22, Theatre, Musical Theatre Concentration

Unfair Negative Portrayals of Nuclear Energy in Popular Culture

Faculty Mentor: Dr. Matthew Guardino, Political Science

Eileen Cooney '23, Quantitative Economics and Political Science, Finance Minor

The Effect of Crude Oil Prices on Personal Consumption Expenditure

Faculty Mentor: Dr. Fang Dong, Economics

Andrea Delgado '22, Sociology

The impact of Socioeconomic Status, Race, and Food Security on Mental and Physical Health

Faculty Mentor: Dr. Brandon Martinez, Sociology

Ethan Dionne '22, Biochemistry and Biology

An Application of Mycobacteriophage Genome Engineering using Bacteriophage Recombineering with Electroporated DNA (BRED) and CRISPR Cas-9 Systems

Faculty Mentor: Dr. Kathleen Cornely, Chemistry and Biochemistry

Kelly Drogan '22, Psychology

Discussion of Hope in Children

Faculty Mentor: Dr. Jennifer Van Reet, Psychology

Anna Fakhri '24, Biochemistry

The Discovery and Analysis of Mycobacteriophage "Rita"

Faculty Mentor: Dr. Kathleen Cornely, Chemistry and Biochemistry

Victoria Hanlon '23, Health Policy and Management

Ava Biafore '23, Management and Health Policy and Management

Promoting Sustainability at Providence College

Faculty Mentors: Dr. Tuba Agartan, Health Policy and Management and Jill Parrett, Environmental Health and Safety

Isabelle Heron '23, Environmental Biology, Business and Innovation and Finance minors

Visual Host Plant Surveys Correlate with Abundance of a Rare Butterfly

Faculty Mentor: Dr. Racheal Bonoan, Biology

Matthew Look '22, Environmental Biology

Rare elfin abundance correlates with host plant density

Faculty Mentor: Dr. Rachael Bonoan, Biology

Julia McCoy '22, English and Political Science

First Person Narration in Postwar British Women's Fiction

Faculty Mentor: Dr. William Hogan, English

Emily Peterson '22, Biology

Jackson Diltz '22, Biology and Psychology

Metabolic Dysregulation in Frontotemporal Dementia

Faculty Mentor: Dr. Marla Tipping, Biology

Nina Pitre '22, Biology and Psychology

Validation of roscoping method for two-marker bones in the alligator forearm

Faculty Mentor: Dr. David Baier, Biology

Gretchen Richardson '22, History

Bermuda's Maritime Economic, Geographical, and Political Importance and Expansion Leading Up to the Imperial Crisis from 1740 to 1800

Faculty Mentor: Dr. Steven Smith, History and Classics

Thursday, April 28

Oral Presentations

2:15 p.m.

Luke Prior '22, History/Secondary Education

Rebranding the Native: Selling the 'Ideal' Indigenous Worker at the Carlisle Indian Industrial School, 1879-1918

Faculty Mentor: Dr. Alexander Orquiza, History and Classics

2:27 p.m.

Joemari Pulido '24, Psychology

Tess Rooney '23, Psychology with a certificate in Neuroscience

Neural Correlates of Visual Statistical Learning and Morphological Processing

Faculty Mentor: Dr. Joanna Morris, Psychology

2:39 p.m.

Alex DeMars '22, Health Policy and Management

Healthcare Facilities Sustainability Case Study

Faculty Mentor: Dr. Deborah Levine, Health Policy and Management

2:51 p.m.

Mary Catherine Archbold '22, History/Secondary Education

"In my end is my beginning": Families, Factions, Faith and Femininity as the Fatal Inheritance of Mary Queen of Scots

Faculty Mentor: Dr. Thomas Grzebien, History and Classics

3:03 p.m.

Kathryn McLoughlin '22, Health Policy and Management, Sociology, Women and Gender Studies

Examination of Factors That Influence Adherence to Public Health Guidelines During Coronavirus Pandemic

Faculty Mentor: Dr. Brandon Martinez, Sociology

3:15 p.m.

Grace Purvis '22, Biology and Global Studies

Navigating the Challenges Faced by Undocumented Immigrants Seeking Women's Healthcare Services in the Providence Area

Faculty Mentor: Dr. Tuba Agartan, Health Policy and Management

Poster Presentations (2 – 4 p.m.)

Adam Banatwala '22, Mathematics and Finance
Esther Rønn '23, Physics and Mathematics
Topological Data Analysis and Ant Interaction Networks
Faculty Mentor: Dr. Laura Murray, Mathematics and Computer Science

Katelyn Breen '24, Marketing
Alexis Carabetta '24, Marketing
Lilah Milton '24, Marketing
Katharine Shaughnessy '24, Marketing
Healthy Eating at Providence College
Faculty Mentor: Dr. Kevin Newman, Marketing

Christopher Bresnahan '23, Biology and Theology
Noah Kozub '22, Biology
Taylor Brysgel '22, Biology
Developing a COVID-19 Yeast Oral Vaccine for Low Income Countries
Faculty Mentor: Fr. Nicanor Austriaco,

Nicola Calabrese '22, Elementary and Special Education, Sociology minor
How autism spectrum disorder and food security are correlated with childhood affection and mental health in the United States: Results from the 2019 National Survey of Children's Health.
Faculty Mentor: Dr. Brandon Martinez, Sociology

Callie Chan '22, Studio Art, Mathematics minor
P.W.I.
Faculty Mentor: Professor Judd Schiffman, Art and Art History

Madelyn Crago '22, Biology
Julia Aguiar '23, Biology
Yeast Bax Inhibitor (Bxi1p/Ybh3p) is a Calcium Channel in E. coli
Faculty Mentor: Fr. Nicanor Austriaco, Biology

Kathryn Ernst '24, Marketing
Margaret Grasberger '24, Marketing
Allie McGuire '24, Marketing
Mairead Ryan '24, Marketing
The Effect of Social Media on Providence College Students
Faculty Mentor: Dr. Kevin Newman, Marketing

Madigan Farrell '22, Studio Art, Marketing minor
Forgotten Lunchbox: Painting Thesis
Faculty Mentor: Professor Heather McPherson, Art and Art History

Jillian Forrester '22, Global Studies and History
Solidarity and the Soviet Union
Faculty Mentor: Dr. Margaret Manchester, History and Classics

Brianna Harper '22, Biology

Prey Range, Predation Efficiency, And Comparative Genomics Of Bdellovibrio From The Same Soil Sample

Faculty Mentor: Dr. Laura Williams, Biology

Devyn Luden '22, Biology

Noah Kozub '22, Biology

Daniel Furey '22 Biology

PMSF and SFN Reduce Alpha-synuclein Aggregation in a Yeast Model of Parkinson's Disease

Faculty Mentor: Dr. Fr. Nicanor Austriaco, Biology

Samantha Oliveira '24, Marketing

3D Game Spaces

Faculty Mentor: Professor James Janecek, Art and Art History

Emily Orloff '22, Chemistry

Colby Agostino '22, Biochemistry and Computer Science

A Computational Experimental Approach to Heterobiaryl Atropisomerism

Faculty Mentor: Dr. Kristen Baker, Chemistry and Biochemistry

Erin Ostrowski '22, Chemistry

Lauren Peck '23, Chemistry

Sophia Moniodes '22, Biochemistry

Structural, electrochemical, and catalytic properties of zinc and iron complexes containing redox activeligans

Faculty Mentor: Dr. Maria Carroll, Chemistry and Biochemistry

Francis Radics '22, Biochemistry

Exploring Indicator Displacement Assays for Phosphate Detection in Seawater

Faculty Mentor: Dr. John Breen, Chemistry and Biochemistry

Kathryn Zenobio '22, Mathematics/Secondary Education, Spanish minor

Spicing Mathematics Teaching through Technology: Case of DeltaMath

Faculty Mentor: Dr. Comfort Ateh, Secondary Education



Index of Presenters and Locations

Stations Numbers are keyed to the maps on the following pages

T = Tuesday Session (12 – 2 p.m.)

W = Wednesday Session (11 a.m. – 1 p.m.)

R = Thursday Session (2 – 4 p.m.)

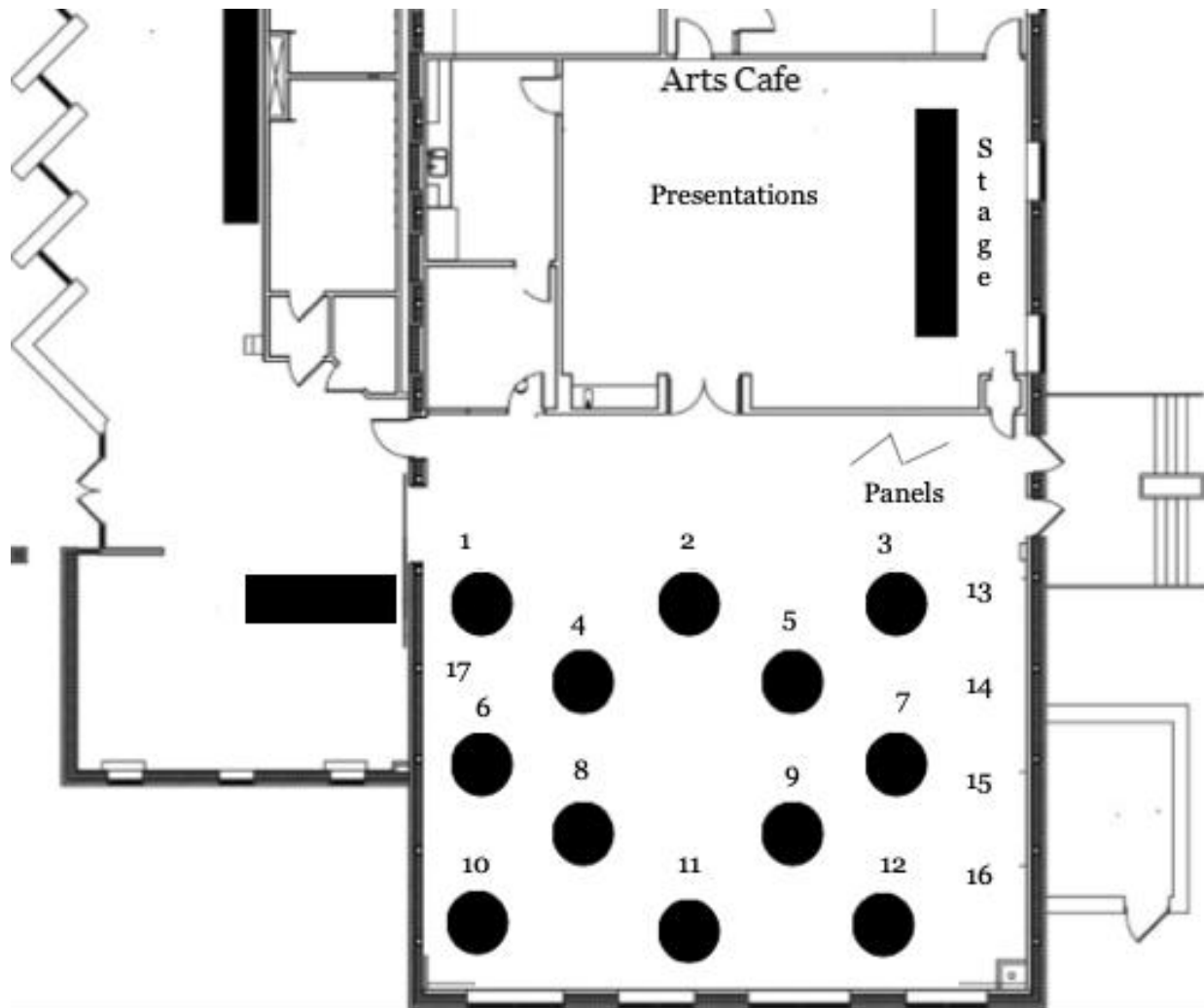
Name, Class Year, Major	Session Table
Colby Agostino '22 , Biochemistry and Computer Science	R - 13
Julia Aguiar '23 , Biology	R - 11
Mary Catherine Archbold '22 , History/Secondary Education	R 2:51 p.m.
Caitlin Ariel '24 , Marketing	W - 8
Adam Banatwala '22 , Mathematics and Finance	W and R - 7
Jensen Barry '22 , Biology and Mathematics	W - 7
Lorenzo Battistoni '22 , Biochemistry	T - 13
Danika Bebe '23 , Global Studies and Public and Community Service Business and Innovation minor	T - 4
Tiffany Berry '22 , Biology and Psychology	T - 7 and W - 9
Catalina Betancur Velez '23 , Political Science and Global Studies	W 12:03 p.m.
Ava Biafore '23 , Management and Health Policy and Management	W - 1
Mia Giselle Binuya '22 , Psychology and Spanish	W - 10
Katelyn Breen '24 , Marketing	R - 4
Christopher Bresnahan '23 , Biology and Theology	R - 12
Taylor Brysgel '22 , Biology	R -12
Katherine Burdick '22 , History and Economics, Theology minor	W 12:27 p.m.
Courtney Caccia '22 , Biology and Psychology	T -15 and W - 9
Nicola Calabrese '22 , Elementary and Special Education, Sociology minor	R - 8

Daniel Cantera '25 , History/Secondary Education	W 11:15 a.m.
Gabriel Capella '25 , Political Science	W 11:15 a.m.
Christopher Capozzi '25 , Marketing	W 11:15 a.m.
Alexis Carabetta '24 , Marketing	R - 4
Callie Chan '22 , Studio Art, Mathematics minor	R - panels
Alexandra Chaparro '22 , Biochemistry	T - 11
Fiona Clarke '23 , English	W 11:51 a.m.
Madelyn Crago '22 , Biology	R - 11
Eileen Cooney '23 , Quantitate Economics and Political Science Finance Minor	W - 4
Diraliz Cruz '23 , Biology	T 12:39 p.m.
Chernys DeLeon Henriquez '22 , Finance, Spanish minor	W -10
Andrea Delgado '22 , Sociology	W - 17
Alex DeMars '22 , Health Policy and Management	R 2:39 p.m.
Jackson DeMartino '23 , Biochemistry	T - 14
Jordan DeMoura '22 , Mathematics	T - 2
Jackson Diltz '22 , Biology and Psychology	W -15
Ethan Dionne '22 , Biochemistry and Biology	W - 14
Kelly Drogan '22 , Psychology	W - 3
Sarah Downey '24 , Spanish/Secondary Education	T - 8
Kathryn Ernst '24 , Marketing	R - 2
Anna Fakhri '24 , Biochemistry	W - 13
Rebecca R. Farias '22G , History	T 12:15 p.m

Madigan Farrell '22 , Studio Art, Marketing minor	R - panels
Daniel Furey '22 Biology	R - 16
Dante Garcia '25 , Political Science	W 11:15 a.m.
Isabella Glennon '25 , Biochemistry	T - 15
Abigail Gramer '24 , Marketing	W - 8
Margaret Grasberger '24 , Marketing	R - 2
Victoria Hanlon '23 , Health Policy and Management	W - 1
Brianna Harper '22 , Biology	R - 3
Isabelle Heron '23 , Environmental Biology, Business and Innovation and Finance minors	W - 16
Riley Hughes '23 , Biochemistry	T - 13
Charles Kannapell '24 , Marketing	W - 8
Declan Kavanagh '25 , Political Science and Marketing	W 11:15 a.m.
Parker Keller '24 , Chemistry	T - 11
Noah Kozub '22 , Biology	R - 12
Morgan Kruzan '23 , Biology	T - 15
Katherine Kudla '24 , Physics	W 12:15 p.m.
Jonathan LaDuke '24 , Marketing	W - 8
Hayden Lens '23 , Biology	T - 15
Lily Lockhart '22 , Biochemistry	T - 14
Matthew Look '22 , Environmental Biology	W - 12
Devyn Luden '22 , Biology	R - 16
Grace Maffucci '22 , Music Performance and Spanish	T - 17

Mackenzie Maude '22 , Mathematics and Art History	W - 7
Julia McCoy '22 , English and Political Science	W - 5
Kara McCurdy '22 , Health Policy and Management, Mathematics and French minors	W 11:39 a.m.
Brigid McEvoy '23 , History and Spanish major, Business and Innovation Latin American Studies minors	W 11:27 a.m.
Allie McGuire '24 , Marketing	R - 2
Caitlin McHugh '24 , Environmental Biology and Economics	T - 12
Kathryn McLoughlin '22 , Health Policy and Management, Sociology, Women and Gender Studies	R 3:03
Lisa McNamara '23 , Global Studies, Black Studies and Business and Innovation Minor	T - 9
Jade Mikalauskis '25 , Humanities and Mathematics	W 11: 15 a.m.
Lilah Milton '24 , Marketing	R - 4
Cassidy Molinare '22 , Psychology and Spanish	W - 10
Olivia Moll '22 , History	T - 5
Sophia Moniodes '22 , Biochemistry	R - 15
Jonathan Montalvan '23 , Computer Science and Spanish	W - 10
Samantha Oliveira '24 , Marketing	R -6
Emily Orloff '22 , Chemistry	R - 13
Jolade Oshinkanlu '25 , Psychology and Global Studies	W 11: 15 a.m.
Erin Ostrowski '22 , Chemistry	R - 15
Kailey Paar '23 , Biochemistry	T - 14
Leigh Paradis '23 , Biology and Neuroscience Program	T - 3

Lauren Peck '23 , Chemistry	R -15
Emily Peterson '22 , Biology	W - 15
Angie Pierre '25 , Global Studies	T – 1 and W 11:15 a.m.
Nina Pitre '22 , Biology and Psychology	W - 11
Joemari Pulido '24 , Psychology	R 2:27 p.m.
Margaret Price '25 , Global Studies and Political Science	W 11:15 a.m.
Luke Prior '22 , History/Secondary Education	R 2:15 p.m.
Alexa Pudlo '22 , Environmental Biology	T -10
Francis Radics '22 , Biochemistry	R -14
Gretchen Richardson '22 , History	W – 2
Matthew Rock '23 , Environmental Biology	T 12:51 p.m.
Esther Rønn '23 , Physics and Mathematics	R -7
Tess Rooney '23 , Psychology with a certificate in Neuroscience	R 2:27 p.m.
Mairead Ryan '24 , Marketing	R - 2
Katharine Shaughnessy '24 , Marketing	R - 4
Gracey Sorensen '23 , Biology	T - 12
Wesley Stephens '25 , Political Science	W 11:15 a.m.
Christine Sullivan '22 , History and American Studies	T 12:27 p.m
Guillermo Thumann '22 , Accountancy, Finance minor	W - 10
Hope Tiboni, '22 , Psychology and Health Policy and Management	T - 7
Christopher Walsh '23 , Biology and Psychology	T - 15
Kathryn Zenobio '22 , Mathematics/Secondary Education, Spanish minor	R - 5



The Center at Moore Hall