Welcome: It is my pleasure to welcome you to the 5th Winter Creative Activities & Research Days at Radford University. It is with excitement we now celebrate the end of every semester with displays of students presenting the new knowledge they created while working closely with faculty and other students to answer questions relevant to society.

We want to thank the faculty who provide these distinctive opportunities for our students to gain work-based learning experiences. We know the experience students get in tackling ambiguous processes and solutions, transforms them well beyond learning skills in their disciplines, to include being more engaged in their workplace even a decade later, developing critical thinking and communication skills which are the most desired Career Readiness skills by employers, and even helping get that first job as 86% of employers indicate they are more likely to hire students who have conducted a research project with faculty.

We hope you find the students presenting this week as inspirational as we do in OURS and look forward to seeing the results of that inspiration in the years to come!

- With Highlander Pride, Dr. Joe Wirgau, Director of the Office of Undergraduate Research & Scholarship

Winter CARD Coordinators in OURS
Joe Wirgau, Director
Jennifer McDonel, Associate Director
Grace Bryant, Administrative Assistant
Kate Mullins, Graduate Assistant
Anna Ruff, Graduate Assistant
Cora Burt, Executive Student Assistant
Abbi Green, Executive Student Assistant
Lily McConkey, Executive Student Assistant

The Following Individuals are Acknowledged for Their Contributions:
Jeff Aspelmeier, Chair, Department of Psychology
Beth Johnson, Director of Library Operations
Jonathan Mayer, Manager for Printing and Postal Services
Hunter Woods, Graduate Assistant, Center for Gender Studies

About the Cover Art: The cover art is a creation of Cora Burt, a second year Art major at Radford University.

I am truly honored to contribute to this program through my artwork. I aimed to evoke a sense of familial warmth and playfulness, mirroring the joy I associate with decorating gingerbread and the holiday season.

Engaging in undergraduate research at Radford University has truly been transformative for me. OURS, coupled with the guidance of my mentor, Dr. Joe Wirgau, has not only opened doors to valuable research experiences but has also led to friendships that have given me a second family. I can't imagine my Radford University journey without the research, OURS, and Dr. Wirgau, who has been both a guide and a source of joy and confidence.

Winter CARD was what I consider to be my introduction into the realm of research, offering a unique platform for students like myself to share knowledge, express creativity, and grow as (gingerbread) people. The event's inclusive nature, drawing participants from diverse majors, results in an eclectic mix of ideas and interests—something I aimed to convey through my artwork.
Winter CARD Schedule at a Glance:

OURS is pleased to announce the schedule for the 5th Annual Winter CARD. For the detailed listing of presentations please go to www.radford.edu/wintercard

**Tuesday November 28th:**

*11th Annual Psychology and Gender Studies Research Symposium*

- **Oral Presentations**  Heth 022  
  4:00 pm – 5:30 pm
- **Poster Presentations**  Heth 043  
  5:00 pm – 7:00 pm

**Thursday November 30th:**

*Travel and Tourism Oral Session*  McConnell Library Ross Gallery  
  9:30 am – 12:15 pm

*Interdisciplinary Poster Session 1*  Center for the Sciences Lobby  
  11:00 am – 12:15 pm

*Interdisciplinary Poster Session 2*  Center for the Sciences Lobby  
  12:30 pm – 1:45 pm

*Interdisciplinary Poster Session 3*  Center for the Sciences Lobby  
  2:00 pm – 3:15 pm

*Interdisciplinary Poster Session 3*  Reed-Curie Atrium  
  2:00 pm – 3:15 pm

*Interdisciplinary Poster Session 4*  Reed-Curie Atrium  
  3:30 pm – 4:45 pm

*Interdisciplinary Poster Session 5*  Reed-Curie Atrium  
  5:00 pm – 6:15 pm

**Expectations for Participating in Winter CARD:**

The Honor Pledge at Radford University not only applies to classes, it encompasses all events including Winter CARD. Each student at Radford University has made a commitment to support and uphold the Honor Pledge without compromise or exception.

Radford University (University) is committed to fostering an environment that is safe and brave, pluralistic and inclusive; and conducive to academic inquiry, free expression, student engagement, and student success. An academic community exists on the basis of shared values and principles. At the University, student members of the community are expected to uphold and abide by these values and principles that form the basis of the Standards of Student Conduct (Standards). These Standards are embodied within a set of core values that include integrity, fairness, respect, trust, freedom, community, and responsibility.

When it comes to complex academic and public problems, informed people can often hold differing views, and a diversity of perspectives can lead to individual and collective growth. Disagreement should be thoughtful and respectful, and criticism of another’s view should be coupled with evident and empathetic care for the person who holds it. Please think of all of our various learning environments as opportunities for building community, including the presentations that are a part of Winter CARD, and consider your actions and words appropriately.
Psychology & Gender Research Symposium

Tuesday, November 28th

Poster Presentations: 5:00 - 7:00 Heth 043

Oral Presentations: 4:00-5:30 Heth 022

The Department of Psychology’s Eleventh Annual Psychology and Gender Research Symposium will be held Tuesday, Nov. 28th. All graduate and undergraduate psychology student research and class projects are welcome, as well as projects from students involved in gender-related scholarship/research in any discipline.

Travel and Tourism Oral Session
McConnell Library Ross Gallery, 9:30 am – 12:15 pm

Travel and Tourism in Greece
Megan Reed
Faculty Mentor(s): Anita Zatori

Travel and Tourism in Korea
Mana Ichise
Faculty Mentor(s): Anita Zatori

Travel and Tourism in London (UK)
Erica McMahan
Faculty Mentor(s): Anita Zatori

Travel and Tourism in the Netherlands
Jennings Felt
Faculty Mentor(s): Anita Zatori

Travel and Tourism in Germany
Carson Murff
Faculty Mentor(s): Anita Zatori

Travel and Tourism in British Virgin Islands
Alexis Taylor
Faculty Mentor(s): Anita Zatori

Travel and Tourism in Jamaica
Hannah Pedersen
Faculty Mentor(s): Anita Zatori

Travel and Tourism in Colombia
Gabriella Stinson
Faculty Mentor(s): Anita Zatori

Travel and Tourism in Finland
Mayu Tsukamoto
Faculty Mentor(s): Anita Zatori

Travel and Tourism in Spain
Clara Regan
Faculty Mentor(s): Anita Zatori

Travel and Tourism in Bora Bora
Ta’Nia Fields
Faculty Mentor(s): Anita Zatori

Travel and Tourism in El Salvador
Paige McNair
Faculty Mentor(s): Anita Zatori
Interdisciplinary Poster Session 1  
Center for the Sciences Lobby, 11:00 am – 12:15 pm

**Student Veterans and Post Traumatic Stress Disorder: The Impact of Peer-Led, Incentivized Case Management Program**  
Sam Cerva, Faith Parrish, Delaney Burris, Alexis Walton  
Faculty Mentor(s): David Brock

**Suffering in Silence: The Impact of a Novel Mental Health Treatment Program on Compliance and Depression in High-Risk Men.**  
Ashton Richardson, Grace Bradshaw, Emily Coe, Melanie (Becca) Goff  
Faculty Mentor(s): David Brock

**Athletic Trainer Burnout: When Exhaustion Effects Performance and Medical Error Rate**  
Luke Grinnell, Akire Wadkins, Ashley Pandelides, Michael Penn  
Faculty Mentor(s): David Brock

**The Student Debt Crisis: The Impact of Early Exposure to a Curated Financial Planning Course on Total Debt Load**  
Kolton Sutphin, Tyler Smith, Kaitlyn Wickham, Zach Johnson  
Faculty Mentor(s): David Brock

**The Impact of Contingency Management on the Prevalence of Vaping in Radford University Students**  
Lauren Wigginton, Vivica Jones, Lily Frost, Abigail Harrigan  
Faculty Mentor(s): David Brock

**Where Can Radford Cook?**  
Olivia Houck  
Faculty Mentor(s): Allison Wisecup

**RU Feeling the Food Pantry?**  
Abby Hairfield, Serenity Mitchell, Katie Bellomo, Audae Dudley  
Faculty Mentor(s): Allison Wisecup

**Effectiveness of the Highlander Pantry**  
Kara Harvey, Olivia Houck, Abby Austin, Jodi Allen  
Faculty Mentor(s): Allison Wisecup

**R U Hungry?**  
Aiyana Lopez, Cara Moff, Hailey Whorley, Chloe Dowell  
Faculty Mentor(s): Allison Wisecup

**Got Food?**  
Jacob O’Brien, LaShawnda Barnes, Kaya Myers, Layne Landes, Anthony Burnette  
Faculty Mentor(s): Allison Wisecup

**A 19th Century Courtship: Letters from Carrie Matteson to John Greene (1878)**  
Briana Hopson  
Faculty Mentor(s): Sharon Roger Hepburn
Courtship Letters from Carrie Matteson: 1876-1879
Robin Carleton, Marinna Hurst, Glenn Bost
Faculty Mentor(s): Sharon Roger Hepburn

Elliott Collection- February, 1944
Charles Garland
Faculty Mentor(s): Sharon Roger Hepburn

The Greene Essays: Brown University Materials circa 1875-1879
Lane Chrepta
Faculty Mentor(s): Sharon Roger Hepburn

Letters from the Greene Family (1859-1888)
Sadie Stebbins
Faculty Mentor(s): Sharon Roger Hepburn

June and December 1944 - Frank Elliott
Brady Hunt, Luke Gross
Faculty Mentor(s): Sharon Roger Hepburn

Letters From Home, October 1944, From The Elliott Collection
Catherine Schleife
Faculty Mentor(s): Sharon Roger Hepburn

Analysis of the Elliot Collection
Grace Osborne
Faculty Mentor(s): Sharon Roger Hepburn

Elliott Collection: August 1944
Kayla Ferrell
Faculty Mentor(s): Sharon Roger Hepburn

Greene Family Deed History
Taylor Nguyen
Faculty Mentor(s): Sharon Roger Hepburn

The Sager Civil War Letter Collection
Elizabeth Webb
Faculty Mentor(s): Sharon Roger Hepburn

Should You Float the New River? Runoff and River Water Analysis
Emma Hendrix, Gillian Linkous, Jenna Blanchette, Logan Dovidio
Faculty Mentor(s): Kristina Stefaniak

Mysterious Runoff Pipe Polluting the New River?
Alexander Wheatley, Lucas Messer, Kim Reuwer, Hassan Al-qattan
Faculty Mentor(s): Kristina Stefaniak
Interdisciplinary Poster Session 1  
Center for the Sciences Lobby, 11:00 am – 12:15 pm

**Synthesis of Unique Transition Metal Clusters**  
Logan Dovidio  
Faculty Mentor(s): George Harakas

**New Data from Selu Observatory**  
Em Stipes, Garrett O'Hara, Quentin Shivnen, Danielle Smith, Ethan Montana  
Faculty Mentor(s): Sandra Liss

Interdisciplinary Poster Session 2  
Center for the Sciences Lobby, 12:30 pm – 1:45 pm

**The Use of Cannabis as an Alternative for Pain Management in Southwest Virginia**  
S'Zahria Jones, Aditya Balsekar, Allen Franklin, Keiyanna Patterson, Kineret Turkovich  
Faculty Mentor(s): David Brock

**The Impact of Alternative Methods on Total Mood Disturbance in Adolescents Diagnosed with Attention-Deficit Hyperactivity Disorder**  
Safiya Ansari, Meredith Lucy, Adriana Kirby, Jada Freeman, Asia Dewer  
Faculty Mentor(s): David Brock

**Increasing Access to Mental Health Services on College Campuses**  
Charlene Turkovich, Ashlynn Wallace, Jo Shufelt, Mackenzie Pauley, Vanessa Bouley  
Faculty Mentor(s): David Brock

**Trends in Opposition of the Death Penalty**  
Brionna Anderson, Breanna Turner, Kristen Peters, Camden McGookin  
Faculty Mentor(s): Allison Wisecup

**Trends of Those in Favor of or Opposed to Sex Education in Public Schools**  
Olivia DiLauro, Chase McElveen, Ryan Hubbard, Al-ameen Umara  
Faculty Mentor(s): Allison Wisecup

**Trends in People Living Together Before Marriage**  
Korrin Stover, Gracie Gallimore, Kelsey McCauley, Chloe Leavitt  
Faculty Mentor(s): Allison Wisecup

**Trends in Attitudes of Sex and Sexuality**  
Shaylee Surface, Emily Lamb, Keriann Kleinhenz, Shaniyah Pullen  
Faculty Mentor(s): Allison Wisecup

**Trends that Support Abortion as a Result of Rape**  
Isabella Miller, Ariana Charlton, Julianne Danner, Kelsea Bethea  
Faculty Mentor(s): Allison Wisecup

**Trends Opposed to Law Against Interracial Marriage**  
Kaia Larrison, Emma Dooley, Jordyn Johnson, Elena Fog  
Faculty Mentor(s): Allison Wisecup
Interdisciplinary Poster Session 2  
Center for the Sciences Lobby, 12:30 pm – 1:45 pm

**Trends in Disagreeing that Men are Better Suited for Politics**  
Chase Brown, Lucas Birdlebough, Sophie Persinger  
Faculty Mentor(s): Allison Wisecup

**Trends in Support of Marijuana Legalization**  
Gregory Accoo, Sofia Macias, Brooke Norman, Aylina Woodard  
Faculty Mentor(s): Allison Wisecup

**Trends in Attitudes About Racial Differences in Relation to Discrimination**  
Janea Boyce, Josh Vannoorbeeck, Ashton Elander, Nya Roberts  
Faculty Mentor(s): Allison Wisecup

**Analysis of Run-Off Water Into the New River**  
Brynn Wilhide, River Rupert, Alexander Gutzwiller  
Faculty Mentor(s): Kristina Stefaniak

**Oh Sh!t: Quantification of Neural Metabolites in Avian Feces**  
Hunter Rogers  
Faculty Mentor(s): Kristina Stefaniak

**Why the Long Phase? The Effects of Power Distribution on Biodiversity Loss**  
Anna Beeson, Lily Backus  
Faculty Mentor(s): Joe Wirgau, Jean Mistele

**The Myth of Iphis and Ianthe and the Effect it had on Later Literature and Art**  
Kaitlyn O'Shaughnessy, Alana Williams  
Faculty Mentor(s): Peter Laws

**Analyzing the Correlation and Quality Between Serve Location, Reception and Pass Ratings on Volleyball Data**  
Lauren Craddock  
Faculty Mentor(s): Caleb Adams

**Is There an "Empathy Gap" in Interracial Contexts?**  
Natalie Heusinger  
Faculty Mentor(s): Daniel Berry

**Individual Difference Factors That Reduce The Intergroup "Empathy Gap"**  
Sophie Crawford  
Faculty Mentor(s): Daniel Berry

Interdisciplinary Poster Session 3  
Center for the Sciences Lobby, 2:00 pm – 3:15 pm

**How Prison Health Care Standards Negatively Impact Incarcerated Women's Health**  
Hayden Gulsby, Iyonah Cartwright, Deon Cooper  
Faculty Mentor(s): Kyshawn Smith
Problems With Solitary Confinement  
Jasper Cheers, Lucas Walker, Elijah Akabar, Samuel Morgan  
Faculty Mentor(s): Lori Elis

Lack of Mental Health Care in Prison Systems  
Haley Thornhill, Alex Neagle, Rusel Steele, Julia Miller  
Faculty Mentor(s): Lori Elis

The Effects of Media on Crime  
Emma Snead, Abbie Lane, Abigail Lee, Hayden Thomson  
Faculty Mentor(s): Lori Elis

Mentally Ill in Prison  
Grace Cleary, Mia Benavides, Haleigh Tadlock  
Faculty Mentor(s): Riane Bolin

Mass Incarceration in the United States  
Hannah Foster, Ashton Elander, J'Lynn Miller  
Faculty Mentor(s): Riane Bolin

Staffing Shortages in Prison Facilities  
Stacey Brandenburg, Raniya Bright, Madison Drees, Jailan Edmonds  
Faculty Mentor(s): Riane Bolin

Healthcare in Prisons  
Matthew Gary, Beau Whitteker, Danny Aguilar, Cabot Call  
Faculty Mentor(s): Riane Bolin

Geriatric Inmates  
Shelby Peace, Tim Lennon, Morgan Kelly, Camden Carlton  
Faculty Mentor(s): Riane Bolin

Crime on College Campuses  
Sophie Paspal, Aniyah Stovall, Audrey Cowden, Michael Kautzmann  
Faculty Mentor(s): Stacey Clifton

Unethical Interrogations Issues  
Shelby Valade, Chloe Wellings, Jade White, Rachel Hicks, Kyle Blanchard  
Faculty Mentor(s): Stacey Clifton

How Working in Corrections Impacts the Mental Health of Officers  
Ayla Douglas, Calista Orr, Colby Gusler, Nicole Pendergast, Rijad Cengic  
Faculty Mentor(s): Stacey Clifton

How Does the Mental Health of Police Officers Affect Their Personal Relationships?  
Mallory Rhodes, Jayla Mcmillan, Ezra L. Jewell, Abigail Eckstein, Benjamin Moore  
Faculty Mentor(s): Stacey Clifton
Interdisciplinary Poster Session 3
Center for the Sciences Lobby, 2:00 pm – 3:15 pm

The COVID-19 Pandemic and Its Impact on Domestic Violence Occurrences
Miles LeVere, Madison Keaton, Yana Duggan, Faith Sprinkle
Faculty Mentor(s): Stacey Clifton

How Does Sexual Assault Victimization of Children Affect Their Relationships Later in Life with the Intersection of Race and Gender?
Danni Moore, Madeline Kemp, Caitlyn Pennington, Carson Jernigan
Faculty Mentor(s): Stacey Clifton

Rehabilitation in Prison
Riley Murphy, Tamiyah Gates, Camari Sheppard, Kallie Grow
Faculty Mentor(s): Riane Bolin

Does the Use of Third-Party Transaction Apps Increase the Chances of Identity Theft?
William Wilkinson
Faculty Mentor(s): Stacey Clifton

Different Ethnicities Experiences with Police Use of Force
Hayley Sanders, Bailey Bramlet, Connor Houston, Abby Rice
Faculty Mentor(s): Lori Elis

Solitary Confinement Produces Irreversible Detrimental Outcomes on an Inmate’s Health
Amanda Bishop, Madison Keaton, Crystal Parrish, Jesse James
Faculty Mentor(s): Kyshawn Smith

The Effect of Parental Incarceration on Children’s Mental Health
Dayle McGraw
Faculty Mentor(s): Stacy Clifton

What Lobbying Tactics Can the Asthma and Allergy Foundation of America Learn from the American Diabetes Association and the Endocrine Society?
Olivia Hunter
Faculty Mentor(s): Daniel Reed

Germany
Rebecca Allen
Faculty Mentor(s): Mark Munzinger

College Students Perspectives on Speech-Language Pathology
Maegan Burnette
Faculty Mentor(s): Diane Millar

Developing Career Readiness Through Undergraduate Research: A Qualitative Analysis
Cora Burt
Faculty Mentor(s): Joe Wirgau

RU Comfortable: A Study on Radford Students’ Perspective on Emotional Expression
Chloe Dowell, Queen Frink, TJ Muller
Faculty Mentor(s): Jean Mistele
Interdisciplinary Poster Session 3
Reed-Curie Atrium, 2:00 pm – 3:15 pm

**Learning Languages Using Linguistic Landscapes**
Audrey Allen
Faculty Mentor(s): Megan Elder-Taylor

**Don't be so Bitter: Dialect Changes Between High and Low German**
Brooke Bailey
Faculty Mentor(s): Megan Elder-Taylor

**Taboo Language and Cursing Culture: Similarities, Differences, and Discourse Across Different Languages**
Kylee Walling
Faculty Mentor(s): Megan Elder-Taylor

**Exploring Thai Cultural Identity Through Language**
Abigail Stuckey
Faculty Mentor(s): Megan Elder-Taylor

**Sociolinguistic Variables in Appalachian Dialects**
Elliott Horton
Faculty Mentor(s): Megan Elder-Taylor

**Exploring Sociolinguistics Through the Art of Songwriting**
Jodi Allen
Faculty Mentor(s): Megan Elder-Taylor

**The Evolution of the Miami Accent: How Immigration Affects Language**
Aidan Velasco-Zimmerman
Faculty Mentor(s): Megan Elder-Taylor

**Phonetic Deletion in New Zealand Communities**
Bo Croson
Faculty Mentor(s): Megan Elder-Taylor

**Spanish Integration in Southwestern Dialects**
Amir Watts
Faculty Mentor(s): Megan Elder-Taylor

**Overview of Swabian Dialects**
Alessia Hood
Faculty Mentor(s): Megan Elder-Taylor

**The Effects of Policy on the Occurrence of Intimate Partner Violence**
Cade Fisher
Faculty Mentor(s): Stacey Clifton

**The Impact of Life Satisfaction with Drug Usage**
Laura Thompson
Faculty Mentor(s): Stacey Clifton
Interdisciplinary Poster Session 4
Reed-Curie Atrium, 3:30 pm – 4:45 pm

Demographics of Serial Killers
Bradley St.Clair, Trena Garland, Nathan Swisher, Noah Zullo
Faculty Mentor(s): Kyshawn Smith

The Lost Colony of Roanoke
Juliana Corrales
Faculty Mentor(s): Christine Mitchell

Unearthing Solidarity: Organized Labor’s Struggle and The Battle of Blair Mountain
James Underwood
Faculty Mentor(s): Christine Mitchell

The Settlers Museum
Rachel Musser
Faculty Mentor(s): Christine Mitchell

The Whiskey Rebellion
Logan Taylor
Faculty Mentor(s): Christine Mitchell

The Upper Big Branch Mining Disaster
Haileigh Osborne
Faculty Mentor(s): Christine Mitchell

What’s in a Genome? A Look at Invasive Plant Species
Cassandra Hash
Faculty Mentor(s): Tara Pelletier

Why the Long Phase? The Effects of Power Distribution on Biodiversity Loss
Lily Backus, Anna Beeson
Faculty Mentor(s): Joe Wirgau

Logudorese
Riley Coburn
Faculty Mentor(s): Megan-Dawn Elder-Taylor

Interdisciplinary Poster Session 5
Reed-Curie Atrium, 5:00 pm – 6:15 pm

Environmental Analysis of The New River
Hayat Khan, Blair Claire-soliz, Reagan Patterson, Sam Williams
Faculty Mentor(s): Kristina Stefaniak

Molecular Modeling of a Bacterial Beta-Glucuronidase Inhibitor
Matt Hineline
Faculty Mentor(s): Kimberly Lane, Christopher Monceaux
Effects of Illegal Harvesting of Medicinal Plants on Appalachia  
Hunter Greer  
Faculty Mentor(s): Christine Mitchell

The Effects of Various Passive Range of Motion Stretching on Muscle Activation  
Jordan Rozell  
Faculty Mentor(s): David Sallee

Case Study of Muscle Activation and Movement Mechanics in a College Student with Scoliosis  
Faith Parrish  
Faculty Mentor(s): David Sallee

Case Study of Muscle Activation in Overhand Pitching  
Tyler Horton  
Faculty Mentor(s): David Sallee

Muscle Activation and ACL Rupture  
Sarah Kellogg  
Faculty Mentor(s): David Sallee

The Impact of Pelvic Tilt on Postural Control  
Devon Vogeley  
Faculty Mentor(s): David Sallee

The Impact of Book Bags on Arch Mechanics, Pelvic Tilt, and Spinal Erector Activity  
Abby Harrigan  
Faculty Mentor(s): David Sallee

Impact of Mobility Exercise on Arch Mechanics  
Ashley Pandelides  
Faculty Mentor(s): David Sallee

The Impact of Lower Leg Training on Measures of Athletic Performance  
William Frias  
Faculty Mentor(s): David Sallee

Inhibition of Streptococcus mutans via Oral Prebiotic  
Andrea Williams  
Faculty Mentor(s): Sarah Kennedy, Karen Powers

Greek Mythology and its Influence on Ancient and Modern Art  
Jennah DiMaggio, Madison Lloyd  
Faculty Mentor(s): Peter Laws

The Influence of One Person on the Youth of Radford  
Dominika Butler, Riley Petroski  
Faculty Mentor(s): Jean Mistele
See You Next Year!