



# Undergraduate Research Day

HOSTED BY THE MCNAIR PROGRAM & THE PSYCHOLOGY FACULTY

CONCORD UNIVERSITY

11th Annual

## Undergraduate Research Day

April 12, 2018

Jean and Jerry L. Beasley Student Center

Ballroom

# 11th Annual Undergraduate Research Day

## Schedule of Events

Concord University  
Jean and Jerry L. Beasley Student Center  
Ballroom

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**9:00 a.m.** Graduate & Professional School Fair

**9:15 am** Welcoming Remarks  
(coffee and refreshments available)

**9:30 -12:30 pm** Paper Session

**12:30 - 1:45 pm** Poster Session and Light Snacks

**1:45 pm** Greetings from University President, Dr. Kendra Boggess  
Introduction by Dr. Karen Griffiee

**2:00 pm** Introduction of the Keynote speaker : Dr. Adriana Falco

*Keynote Address:*

“Explosive Volcanic Eruptions: Understanding Deadly Volcanoes to Help  
Communities Prepare for Eruptions”

Dr. Janine Krippner

Volcanologist and Postdoctoral Researcher at Concord University

**3:00 pm** Closing Remarks

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# “Explosive Volcanic Eruptions: Understanding Deadly Volcanoes to Help Communities Prepare for Eruptions ”



## **Dr. Janine Krippner**

Volcanologist and Postdoctoral Researcher at  
Concord University

Originally from New Zealand, Janine recently completed her doctoral degree at the University of Pittsburgh where she studied pyroclastic flows from Shiveluch volcano in Kamchatka and from Mount St. Helens in Washington State. At Concord, Janine is working on a tephra (volcanic ash and pyroclastic deposits) project. She actively engages in volcano outreach on social media and has attracted more than 12 thousand followers on Twitter. She has also been interviewed many times by both print and broadcast media including the BBC News, CNN, Discovery Channel, NPR, The Wall Street Journal, New York Times, National Geographic, and other media outlets around the world.

*Paper Session 1 - Ballroom - 9:30-10:45*

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9:30 am

Designing an Undergraduate Molecular and Cell  
Biology Project-Based Laboratory Course  
Corrina G. Robertson and Dr. Kim Chambers

Presented here is a laboratory course for an undergraduate molecular and cell biology class that is designed to introduce the students to multiple techniques commonly used in the field as well as mimic an undergraduate research experience. The objective was to design a project involving cloning human alpha-tubulin (TUBA1B) into an enhanced green fluorescent protein (EGFP) mammalian expression vector and expressing it in mammalian cells to be visualized via fluorescence microscopy. To prepare for the students' project, two plasmids were prepared. First the TUBA1B cDNA was cloned into a vector that will serve as the template for the students' PCR reaction. The second plasmid prepared was the pEGFP mammalian expression vector. The students will clone the TUBA1B cDNA into this vector and use it to express the EGFP-tubulin fusion protein in mammalian cells.

9:45 am

The Role of the Seven Deadly Sins in The  
Canterbury Tales  
Ashley Meadows and Dr. Gabriel Rieger

Much like the social classes we are familiar with more recently, the Middle Ages had the three estates: nobility, clergy, and peasantry. Geoffrey Chaucer's *The Canterbury Tales* is an estates satire, criticizing the three estates through mockery

and parody. Chaucer uses a popular subject during the Middle Ages, the Seven Deadly Sins, to mock the three estates, revealing the similarities between the estates and exposing the imperfections and flaws of all mankind. The Sins are personified in the characters, creating an entertaining, and sometimes offensive, satire of the idea of three estates. "The Role of the Seven Deadly Sins in *The Canterbury Tales*" investigates these roles deeper, examining characterization, structure, and language used by Chaucer.

10:00 am

Pacifism in Kurt Vonnegut  
James Trent and Dr. Charles Britchford

The purpose of this research project on Kurt Vonnegut's literature is to both expound the greater literature on Kurt Vonnegut and to better elaborate on Vonnegut's idea of pacifism. Vonnegut was a prolific advocate for pacifism and general kindness, speaking about it in many of his speeches and making it a theme throughout many of his works, but there has been very little critical literature on this topic, and when it is mentioned it is spoken of as if Vonnegut proposes an unyielding form of pacifism. Instead, the presentation will argue that Vonnegut understands some necessity to violence, but is advocates for people to be constantly skeptical of it. The paper will do this with biographical information and close reading of Vonnegut's novels, along with replying to previous critical literature to articulate where exactly the literature is lacking on the topic.

*Paper Session 1 - Ballroom - 9:30-10:45*

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10:15 am

The Soaring Sacrifices: Birds as Healing Agents  
in Literature and Lore

Rachel Pitcher and Dr. Elizabeth Roth

In literature, folklore, and film birds have been depicted as agents of healing. This healing can come in the form of physical, emotional, or spiritual restoration. Examples range from use of the blood of a sacrificial bird in an Old Testament ritual cleansing of leprosy to the use of seagull corpses in the treatment of smallpox in a 20th century surrealist film. All of these depictions of sacrificed birds as healing agents can be seen as prophesying or echoing the theological doctrine of the redemptive sacrifice of Christ.

10:30 am

Ebony and Ivory Live Together In Perfect  
Harmony

Abby Rector and Dr. Elizabeth Roth

William Blake creates an intricate work of coexisting contraries in his Songs of Innocence and Experience. Within this collection, his poem "The Little Black Boy" exemplifies his fixation on balancing contradictions by asserting the paradoxical racial, spiritual, and romantic relationship between a black boy and a white boy. A close reading of the text reveals that the white boy is physically incapable of being close to God while the black boy is perfectly equipped for a life spent in God's presence, serving the white boy for eternity. One of the most tangible readings of "The Little Black Boy" is that the masculine black boy is compelled to be like the feminine white boy because he is attracted to the balance their union creates. This romantic desire and same sex attraction is clarified and made evident in the hand-painted illustrations that accompany the work.

Life and Experience: Influences on the Brontë Sisters' Works



## *Paper Session 2 - Ballroom - 11:00-12:30*

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11:00 am

### Effects of Prior Anxiety Level on Nicotine Place Conditioning in Adolescent Female Rats Chana Patterson and Dr. Adriana Falco

There are many changes occurring in adolescents, not only in the body but the brain also. With the changes that are taking place, adolescents are more vulnerable to the effects of nicotine. Little research has been done pairing anxiety to nicotine reinforcement in adolescent female rat models. This study examines the relation between prior levels of anxiety and reactivity to nicotine in a place conditioning apparatus. Female adolescent Sprague-Dawley rats (P30) were divided into high and low anxiety groups using the elevated plus maze along a median split. High anxiety rats were compared to low anxiety rats for their reactivity to nicotine versus saline controls during acquisition of a biased place conditioning paradigm. The findings of this study were a small non-significant increase in the high anxiety nicotine subjects with non-significant decreases in the control and low anxiety nicotine subjects. The results suggest that more research needs to be done.

11:15 pm

### Effects of Emotional Arousal and Valence on Recall: Fabrication of False Memories Jacob Meadows and Dr. Adriana Falco

One of the most debated and researched topics of false memories are the origins of the memory. Although it is unknown as to their exact cause, there are many theories that incorporate the explanatory dimensions of false memories. Within the current research, the goal is to identify particular

emotions that influence the fabrication of false memories and the levels of arousal that accompany these emotions. However, it is important to discuss previous research that attempts to explain the development of false memories, as the field is highly diverse and many theories exist that trace the origins of false memories. False memories can be characteristics of controlled experiments, traumatic experiences, developmental issues, or the product of everyday life (Brainerd & Reyna, 2002). It is the goal of the current research to evaluate the influence of emotion and arousal on false memories, while examining other causes and implications.

11:30 pm

### Sterne's Poststructuralist Hobby-Horse: The Flaws of Narrative in Tristram Shandy Jeremy Wood and Dr. Michelle Gompf

Laurence Sterne's *Tristram Shandy* is arguably one of the most ambitious novels of all time because it seeks to tell a "complete" story. The strangest aspect of Sterne's novel is that, while most narratives seemingly go from point "A" to "Z," Sterne's narrative does not. This could lead one to describe *Tristram Shandy* as disordered; however, this disorder may be interpreted as Sterne's criticism of a "complete" narrative. This raises the questions, where is point "A?" Is point "Z" beyond the scope of understanding because it reaches into infinity? How can a story be "complete" if points "A" and "Z" cannot be pinpointed? By exploring the development of narratology in relation to *Tristram Shandy* and the criticism associated with the novel, this essay argues that narratives are not "complete" because narratives as a whole are fundamentally subjective and incomplete.

## *Paper Session 2 - Ballroom - 11:00-12:30*

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11:45 pm

Using Volcanic Ash to Constrain the History of Ice Age Lakes  
Cameron McNeely and Dr. Stephen Kuehn

During the ice ages, many large lakes existed in the western United States in an area known as the Great Basin. Today, much of this area is desert. As ice sheets advanced across the continent and then melted away, these lakes expanded and dried up in repeated cycles. Regional water availability and ecology also changed. Most available data on these lake fluctuations only capture relative changes in water level. At Summer Lake, Oregon, we have found that exposures of ancient lake sediments at different elevations make it possible to determine the water levels at different times. Layers of lake sediments versus evidence of erosion record whether a site was wet or dry. Using field-based research in Oregon to document lake levels and analysis of tephra layers for age information using Concord's electron microprobe, we are able to correlate between different locations and determine a timeline for changing water levels.

12:00 pm

The von Restorff Effect In Marketing  
Gibou Njie and Dr. ——— Malamisura

The focus of this research is to find out the effect on the consumers mind, that is built because of applying the von Restorff Effect in promotional campaigns. I aim to see whether the von Restorff effect is the key to successful advertising, and brand imaging. In addition,

whether there is a significant difference on consumer attraction for ads containing the VR effect, compared to those that do not. The isolation effect is a well-known memory phenomenon whose discovery is frequently attributed to Hedwig von Restorff (1933). It claims that, if all, but one item of a list is similar on some dimension, memory for the different item will be enhanced. (Fabiani and Donchin 1995). Therefore, is it the von Restorff effect capturing our attention, does it fall to other independent variables such as memory, or is it because of our brand loyalty, and the brand image of the company?

12:15 pm

Installation Art: The Relationship Between the Artist, the Art, and the Viewer  
Alyssa Justice, Mr. Jack Shefler, and Mr. Jamie Biggs

Installation Art can be briefly described as any art form that treats any space in its entirety like a single piece, is created with the space in mind, and always acknowledges a reciprocal relationship between the viewer, work, space, and the artist. However, finding a description or explanation of the “relationships” present within Installation Art is even more difficult. This work will explore the different “relationships” that are held by the various components in Installation Art, and their importance to the larger piece as a whole. The goal of this work is to define, to the best of my abilities, what constitutes Installation Art, what the “relationships” found to be necessary for defining Installation Art are, as well as how the two are related, and how my own work fits into this definition.

## Poster Presentations

1	Comparison of Fault-Generated Pseudotachylites From Mt. Elbert and the Homestake Shear Zone, Colorado, USA	Anneliese Fliger and Dr. Joseph Allen
2	Utilizing Titanium in Quartz as a Geothermometer in Metamorphic Rocks of the Homestake Shear Zone	Anneliese Fliger and Dr. Stephen Kuehn
3	Petrology of Pseudotachylyte and Cataclasite from the Homestake Shear Zone and Lonesome Lake Fault, CO	Caitlin Testerman, Lindsey Deskins, Haley Dow, and Dr. Joseph Allen
4	Temperatures of the Origin of Plastically Deformed Pseudotachylyte from the Homestake Shear Zone (Colorado, USA)	James Meoton, Dustin Anderson, Miranda Basconi, Hannah Seckman, and Dr. Joseph Allen
5	Pseudotachylyte in the Homestake Shear Zone	Michael Ruhnke, Dr. Joseph Allen, and Stephen Kuehn
6	Pseudotachylyte, Fact or Fiction?	Jonathan Hardman and Dr. Stephen Kuehn
7	Relative titanium presence in quartz found in pseudotachylyte from the Slide Lake Shear zone, Colorado	James Frye and Dr. Stephen Kuehn
8	Using Ti in Quartz as a Geothermometer in Pseudotachylyte-bearing Granitoids from Grizzly Creek, Colorado	Carl Lilly Jr. and Dr. Stephen Kuehn
9	Pseudotachylyte's role in determining the relative slip velocity of faulting in Homestake shear zone, Colorado.	Tyler Green and Dr. Joseph Allen
10	Geothermometry using titanium bearing quartz in pseudotachylyte from Slide Lake shear zone, Colorado	Tyler Green and Dr. Stephen Kuehn
11	Identifying Lysozyme C through the Observation of Antimicrobial Properties in Eggs	Lindsey Overbey, Lauren Blunt, Aaron Ward, and Dr. Kim Chambers
12	Purification and Identification of C-Lysozyme from Chicken Egg Whites.	Cole Hollifield, Dakota Bailey, and Dr. Kim Chambers
13	Isolation and Identification of an Antimicrobial Protein in the Egg	Layton Romano, Allison Garrett, and Dr. Kim Chambers
14	Determining if Egg White Has Antimicrobial Activity	Kayla Williamson, Carl Dillingham, and Dr. Kim Chambers
15	Identification of Antimicrobial Proteins in Gallus gallus domesticus Eggs	Emily Culver, Haley Fields, and Dr. Kim Chambers
16	Purification and Identification of an Antimicrobial Protein in Chicken Eggs	Leila Feuchtenberger, Zehra Sherwani, Caitlin Hudson, and Dr. Kim Chambers

## Poster Presentations

17	Purify, isolate and Identify Protein with Antibacterial properties	Kadeja Davis, Greg Connell, and Dr. Kim Chambers
18	Isolation of Lysozyme C From Chicken Egg White Using Various Protein Purification Methods	Emily Brown, Sara Tolley, and Dr. Kim Chambers
19	Isolating, Purifying, and Identifying Antimicrobial Proteins in Chick Eggs	Isaac Van Blaricom, Sarah Welling, and Dr. Kim Chambers
20	Alternative Antibiotics	Keirston Sutherland, Karley Poff, and Dr. Kim Chambers
21	Generating Mutants to Observe the Effects of Acetylation & Deacetylation on Alpha-Tubulin in JEG3 Cells	Corrina Roberts and Dr. Kim Chambers
22	The Purification and Identification of a Lysogenic Protein, Lysozyme C, via Biochemical Techniques in Chicken Eggs	Audrey Lore, Amy Lusk, and Dr. Kim Chambers
23	The Effect of Physical Activity on Hip Flexion and Extension	Lorren Hill and Dr. Douglas Creer
24	Comparing the Effects of Exercise on Resting Heartrates and Blood Pressure of Rigorously Trained Athletes and Untrained Non-Athletes of Concord University	Chad Frazier and Dr. Douglas Creer
25	Effects of Exercise on Blood Sugar Levels	Taylor Cundiff and Dr. Douglas Creer
26	The Effects of Gibberellic Acid on Plant Growth	Austin Bass and Dr. Douglas Creer
27	Use of chewing gum as an effective means of increasing short-term memory among college students	Jamal Petty and Dr. Douglas Creer
28	Physiological Effectiveness of 3-Minute PracticeAlternate Nostril Breathing Technique	Caitlin Hudson and Dr. Douglas Creer
29	The Effects of Being a Student Athlete on Classroom Performance vs. Non-Student Athlete	Matthew Plumley and Dr. Douglas Creer
30	Endomycorrhizal Fungi Vs. Ectomycorrhizal Fungi in the Overall Growth of Pea Plants	Hunter Christian and Dr. Douglas Creer
31	Do Scents Improve Recall Memory?	Dakota Toth and Dr. Douglas Creer
32	A Comparison of Compost and Fertilizer in Bean Seedling Growth	Bryan Hatcher and Dr. Douglas Creer
33	The Correlation of Stress and High Blood Pressure in College Students	Tori Shinn and Dr. Douoglas Creer

## Poster Presentations

34	Is the Presence of Salmonella on Chicken Breast Effected by Various Thawing Methods?	Emily Brown and Dr. Douglas Creer
35	Differences in Heart Rate of Athletes and Non-athletes	Cassidy Maynard and Dr. Douglas Creer
36	Testing Do It Yourself (DIY) blending eye brush cleaning methods using Escherichia coli bacteria	Skylar Stark and Dr. Douglas Creer
37	The Effects of Rock Salt on the Green Algae Spyrogira	Rebekah Snow and Dr. Douglas Creer
38	A Comparative Study of Microplastic Concentrations in Freshwater in Mercer County, WV	Tiffany Wimmer and Dr. Douglas Creer
39	The Efficacy of Synthetic Anti-Parasitic Drugs as Compared with Plant-Derived Treatments	Tiffany Wimmer and Dr. Thomas Ford
40	Cloning Mutations of p53 for Expression in Tissue Culture Cells	Sydney Waugh and Dr. David Chambers
41	Engineering a Cellulosome: Increasing Synergy and Efficacy by using a Chimera	Sarah Welling and Dr. David Chambers
42	Effect of organic biostimulants on germination, shoot growth and fruit development of tomato ( <i>Solanum lycopersicum</i> L. var. <i>cerasiforme</i> ) grown in soilless media	Allison Copolo and Dr. Martha Eborall
43	Attention	Sabrina Belcher and Dr. Donald Rieley
44	Activation Threshold of Cholesterol Absorption in Zebrafish when Paired with Alpha-Linolenic Acid (C18:3) compared to Oleic Acid (C18:1)	Codie Street, Joshua Doud, and Dr. James Walters
45	Cytokine Production Profile in CD8+ T Cells of Stressed Mice during <i>Chlamydia muridarum</i> Genital Infection	James Auton and Dr. Tesfaye Belay
46	Determining the role of macrophages in a <i>Chlamydia muridarum</i> infected stress mouse model	Brittany Bonamy and Dr. Tesfaye Belay
47	Effect of coconut water and banana powder on shoot and root development of tobacco ( <i>Nicotiana tabacum</i> L.) callus tissue	Erica Camp and dr. Martha Eborall
48	Comparison of Chemical and Enzymatic Reduction In Order to Achieve Enantiomerically Pure Compounds	Mark Corvin and Dr. Kim Young
49	Study of natural product synthesis by the conversion ketoester into diazo-ketoester	Marquis Holt and Dr. Kim Young
50	Optimization of Carbon-Carbon Extension Reaction of Amino Acid	Melissa Miller and dr. Kim Young

## Poster Presentations

51	The Dreamers; A study of the understanding of the DACA program among students	Catherina Medaglia Gonçalves dos Santos and Dr. Tracy Luff
52	Perceptions of Sexual Harassment Among College Students	Megan Stemple and Dr. Tracy Luff
53	Gender Wage Gap: Are Red States Different than Blue States?	Pilar Elias and Dr. Tracy Luff
54	Different Racial Views Of Athletes And Protesting; NFL and The National Anthem	Adia Davis and Dr. Tracy Luff
55	How Socioeconomic Status Affects Opioid Abuse in the United States	Sydney Stevens and Dr. Tracy Luff
56	Red vs. Blue: A Comparison Between Conservative and Liberal States in Reference to Unemployment Rates	Christina Armentrout and Dr. Tracy Luff
57	Injustice: The effect of budget cuts on West Virginia's education system	Rebekah Salyer and Dr. Tracy Luff
58	Equal Opportunity Warfare: Women in the Infantry	Jed Choate and Dr. Tracy Luff
59	Tweeting Crooked Hillary	Jordan Hosey and Dr. Tracy Luff
60	How Race and Religion Affect Views of the Death Penalty in Appalachia	Kaitlin Hubbard and Dr. Tracy Luff
61	Frames conservative and liberal news articles use for Mexican Immigrants	Maria Harer and Dr. Tracy Luff
62	Opinions on Drug Addiction Programs	Jamie Williams and Dr. Tracy Luff
63	Health Disparities in West Virginia	Jamie Williams and Dr. Jill Nolan
64	Health Hazards and Hydraulic Fracking	Kendall Cogar and Dr. Tracy Luff
65	Ending the War on Drugs: Policy Changes that May Aid the U.S. Journey	Kiara Showalter and Dr. Tracy Luff
66	The Power of Colors: Associations that Exist Between Color and Mood	Kiara Showalter and Dr. Rodney Klein
67	Hate Groups and The Presidents: A look at hate group growth under the last four presidents	Dana Farris and Dr. Tracy Luff

## Poster Presentations

68	Gender Differences in Attitude Toward Sexual Harassment	Ashley Calvert and Dr. Tracy Luff
69	Media Representation on Mass Shootings and Mental Illness	Kaila Hall and Dr. Tracy Luff
70	Religion and the Death Penalty	Jacob Trump and Dr. Tracy Luff
71	Attitudes toward Climate Change	Traore Yacouba and Dr. Tracy Luff
72	Is there a correlation between a student's GPA and number of credit hours?	Keira Wickline and Dr. Rodney Klein
73	Survey Responses	Steffeny Hylton and Dr. Rodney Klein
74	Music's Effect on Memory	Rebecca Farmer and Dr. Rodney Klein
75	Conformity Compliance	Jessica Peterson, and Dr. Rodney Klein
76	Shape Recognition as a Stroop Effect	Christian Ballard and Dr. Rodney Klein
77	Active Memory	Tara Williams and Dr. Rodney Klein
78	Effects of Background Music on Memory Recall	Laiken Richmond and Dr. Rodney Klein
79	Suggestion and How it Can Change Your Perception	James Wilburn and Dr. Rodney Klein
80	Effects of Time on Short Term Memory	Gabrielle Tallent, Kristen Copenhaver, and Dr. Rodney Klein
81	How Dress Affects Perception	Jade Gravley and Dr. Rodney Klein
82	Music Effects on Memory	Kelshawn Grant and Dr. Rodney Klein
83	Pictures Effect on Memory	Daniel Poore and Dr. Rodney Klein
84	Effects of Credit Hours and Cell Phone Usage	Jamie Hogan and Dr. Rodney Klein
85	Gender's Effect on Short-term Memory	Jodie Howell, Catherine Allen, and Dr. Rodney Klein

## Poster Presentations

86	The Neurological Findings of Military Blast-Force Traumatic Brain Injury	Erin McGrady and Dr. Adriana Falco
87	A Survey of Post Traumatic Stress Prevalence in Southern West Virginia	Stephen Daniel and Dr. Karen Griffee
88	The Effects of Socioeconomic Status on Grit in Individuals With vs. Without a College Education	Victoria Bright and Dr. Karen Griffee
89	The Impact of Implied Racial Identities and Criminal Records on Employment	Alyssa Harnish, Dr. Lawrence Eppard, and Dr. Rodney Klein
90	Effect Politics Has on Happiness	Kellie Williams and Dr. Rodney Klein
91	Effects of Chewing Gum on Cognitive Performance	Emily Davis and Dr. Rodney Klein
92	An Examination of Advanced Placement Course Offerings in West Virginia	Trevor Mullins, Benjamin Evans, Perri Williams, Carley Graves, Lanie Craig, and Dr. James White
93	Analyzing the History of the Dichotomy of Science and Religion	Tyler Blake and Dr. Thomas McKenna
94	Desire Theory	Jacob Ashcraft and Dr. Thomas McKenna
95	Classical Music Is Not Dying, People Are Just Consuming It In Different Ways	Sarah Bailey and Dr. Thomas McKenna
96	Researching the Decline of Christianity in Younger Generations	Abby Edwards and Dr. Thomas McKenna
97	Marx's Delivery Service	Jeremy Wood and Dr. Thomas McKenna
98	Project the Game of Cloud: A Game Designed to Familiarize Young/Future Professionals with Cloud Technology Trends and Services	Ayca Kucukdurmaz and Mr. Lonnie Bowe
99	IRC Development with Java	Nicholas Bailey, Shaun Houck, and Mr. Lonnie Bowe
100	Developing an Artificial Intelligence for an Imperfect Information Game	William Harvey and Mr. Lonnie Bowe
101	Developing a Maze Solving Algorithm	Jordan Tuck and Mr. Lonnie Bowe
102	Analysis of Interplanetary Orbital Transfers Using Solar Sails	Kyle Bludworth and Mr. Lonnie Bowe

# Notes

# Notes



Concord's McNair Scholars and Psychology Program thank the following for support and generous funding of this event:

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the Associate Dean's Office,  
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We also thank all the student researchers for producing such exceptional research that makes this day a success year after year.

