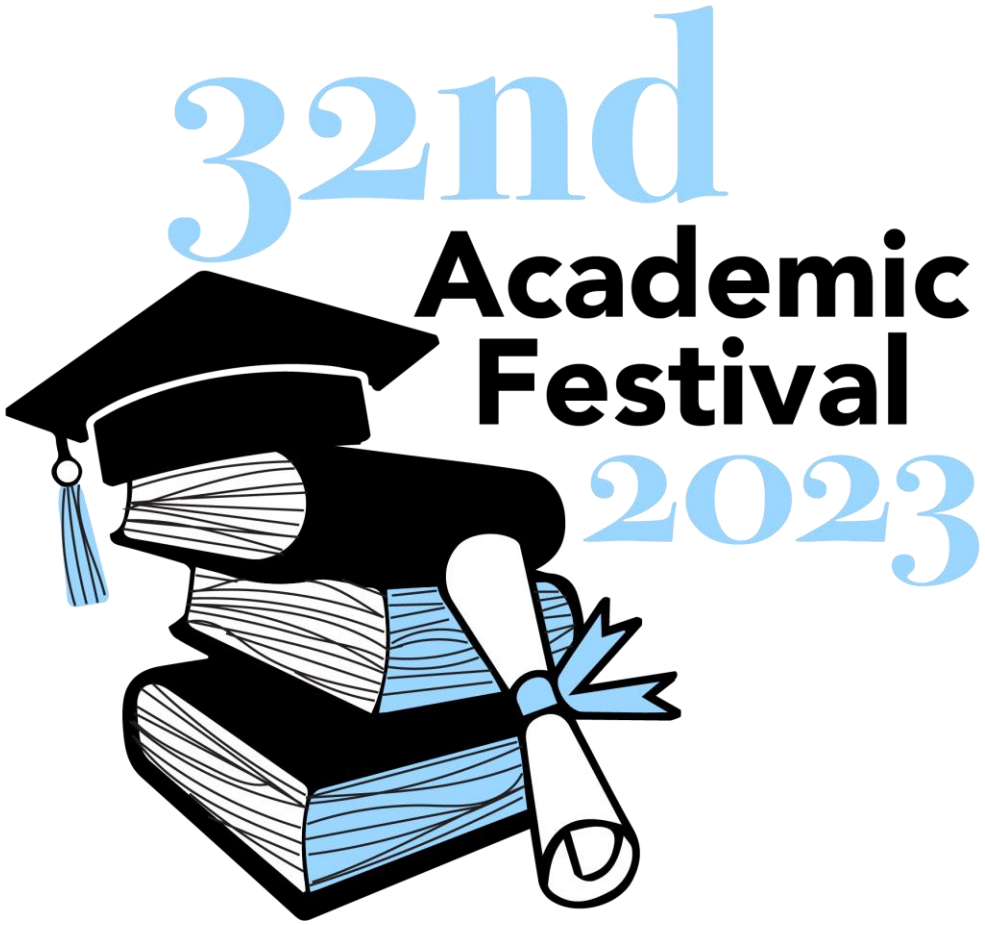

Wheaton College Research & Creativity Symposium

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Message from the Provost

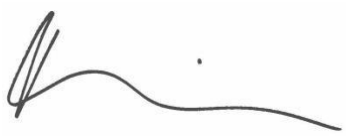
Dear Students,

Through the years, we travel intriguing roads, we navigate turbulent waters, and we climb awesome heights. Each of these moments build who we are and, together, they shape our intellectual journey.

The curiosity you expand on those paths, the tenacity you hold on those waves, and the courage you deploy on those mountains are the inherent conditions of complex thinkers and avid learners. They allow for new ideas to emerge, and they structure the chaotic beauty of knowledge into wisdom.

It is with pleasure that I recognize your work, your dedication, your talent, and your expertise. And it is with admiration that I honor your lasting legacy at Wheaton College as we celebrate Academic Festival.

With warm congratulations,



Touba Ghadessi, Provost

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Academic Festival Participants: Posters and Tables

Katrin Anwar '24

Independent Study with Professor Chowdhury

A Case Study on Praava Health

Julia Campion '25

The Plague of Killer Media
Class: English 101, Research paper for Professor Angie Sarhan

This piece centers around serial murder and the flaws of its representation in film and media today. From the lack of representation of victims to the sensationalization and romanticization of famous serial killers, the depiction of serial murder in our favorite true crime docuseries and documentaries is extremely damaging to the public perception of serial murder.

Nina Christenson '23

Physics Capstone with Professor Dipankar Maitra

Polarization Observations of Young Stellar Objects

Senior capstone project in observational astronomy focused on observing young stellar objects with a new polarization sensitive imaging sensor at the Wheaton College Observatory

Allison Darling '26

Internship with Phenomenex: Mansfield Bio-Incubator under the supervision of Professor Pabel Delgado

Connections, Value, Students

Sadie Drouin '23

Honors thesis, supervised by Professor Christina Reppucci

The Effects of Maternal Separation and/or Post-Weaning Social Isolation on Memory in Adolescent Rats

When stressful experiences occur in childhood, it can become detrimental to brain development and have lasting effects on behavior. Here we wanted to determine if rodent model early life stress (ELS) paradigms applied during different time periods in development (i.e., maternal separation during postnatal days (PND) 4-20 for 2 hours each day and/or post-weaning social isolation from PND 21 to the end of the study) affect memory in adolescent (PND 37-44) male and female Wistar rats. We conducted two memory tests: Novel Object Recognition (NOR) and Novel Object Location (NOL), to determine if non-spatial and/or spatial memory was affected by our ELS paradigms. Rats exposed to post-weaning social isolation tended to have impaired non-spatial memory. In contrast, spatial memory was not affected by either ELS paradigm. Our next step is to investigate myelin density in the dentate gyrus and CA1 regions of the dorsal hippocampus. Here myelin is essential to sustain axon function for memory consolidation and recall. We predict a decrease in myelin density in those rats exposed to post-weaning social isolation.

Braxton Farrin '24

Internship at Massachusetts General Hospital and Center for Genomics. Work with Professor Kathleen Morgan.

CGM-A1c Study

Matt Hull '25

Research with Professor Joslyn Mills

cnnm-5's Effect on Proteostasis and Huntington's Disease in C. elegans

Valery Leon Quintero '23

Senior Honors Thesis, supervised by Professor Javier Treviño

The Role of Journalists in documenting Crimes Against Humanity

The research focuses on the role of Venezuelan independent journalists in documenting crimes against humanity committed by the Venezuelan State from 2014 until the present. Additionally, it aims to study the different frameworks that journalists use to report such atrocities in the context of censorship and violence. Finally, the study corresponds to the understanding theory of media framing to domestic and international audiences and how they build the narrative that promotes justice for the victims and serves as evidence for international organizations.

Michael Marple '24

A Classroom Project with Professor Lisa Lebduska

PFAS Digital Story

In this digital story, I describe the hidden dangers that PFAS exposure presents, such as kidney cancer, testicular cancer, high cholesterol, and weakening vaccine immunity in children. PFAS is all around us: in hair products, pots and pans, smart phones, food packaging and many other things we come in contact with on a daily basis. My digital story shares what's being done by governments around the world to combat this problem, as well as what individuals can do in their daily lives to help minimize their exposure to PFAS.

Mickey McDonald '24

Special Project from Semester in the City

Identity Collage Workshop

In Spring 2022, I participated in the study-away program Semester in the City, in which students have an internship in Boston. My internship was at 826 Boston, a nonprofit writing and publishing organization that puts tutors in schools across Boston via their Writers' Room program. The mission of 826 Boston is "to empower students to express their ideas effectively, creatively, confidently, and in their individual voices." To work towards this goal, I, along with my fellow workers in 826 Boston's Blanca Burgos Writers' Room, conducted a series of workshops in which students created collages with images that they felt represented their identities. The participants were fourth-grade students in 826 Boston's after-school program at the Rafael Hernández School, in which the Blanca Burgos Writers' Room is located. Over the course of three workshops, the students created their collages and wrote descriptions explaining why they chose some of the images in their collages.

Ophelia McGrail '23

Senior Honors Thesis, supervised by Professor Andrew Davinack

Unraveling a Potential Cryptic Species Complex of Polydora colonia and Polydora spongicola

Clara Quintanilha '23

Independent research with Professor Dipankar Maitra

Theoretical Modeling of Polarization due to Rayleigh Scattering in the Earth's Atmosphere

Adele Rossignol '23

Senior Honors Thesis, supervised by Professor Kathy Morgan

Perception of Reception: Communication Between Parents and their Children on the Autism Spectrum

In order to further investigate the dynamics of parent speech to their children with Autism Spectrum Disorder (ASD), 6 pre-existing unstructured free-play videos of parent-child dyads were subjected to secondary analysis. Coding procedures evaluated the quality and quantity of parent speech as a function of the intended purpose of the communication for the children and diagnostic status. The four included codes can summarized as Child-directed communication, given that the intention of the speech was either to encourage or to redirect the focus of the child. The findings of this investigation may inform the development of future studies to help progress the understanding of the language development of neurodivergent children

Elizabeth Shelto '23

Senior Capstone Project, supervised by Professor Rolf Nelson

Research on the Effects of Video Game and Sports Experience Saccadic Suppression

Nicole Toppses '23

Senior Honors Thesis, supervised by Professor Bob Morris

Investigating Cilia on Human Stem Cell-Derived Cardiomyocytes During Tissue Repair

Academic Festival Participants: Group Projects

Izabella Agraz, Charlotte Gedraitis, Sarah Joyce, Khalid Rasouli

Biology Research Experience with Professor Laura Ekstrom

Research Experience Poster

Celeste Berenbaum, Adrian Grimm

Independent Research with Professor Dipankar Maitra

Developing Wheaton Imaging Solar Polarimeter (WHISPER), an instrument to Study Solar Coronal Polarization

The outermost layer of the Sun's atmosphere, otherwise known as the solar corona, is difficult to observe and study due to its relative dimness compared to the photosphere. The corona is most visible during a total solar eclipse, which is the main motivation behind designing and building the Wheaton Imaging Solar Polarimeter (WHISPER). WHISPER will measure the polarization structure of the solar corona during the upcoming total solar eclipse in 2024 using the PHX050S-PC polarization camera equipped with a Sony IMX250/264 CMOS sensor. The research we will present has been primarily focused on testing our equipment and writing Python code to automate the data acquisition process and analyze our results.

Maia Young Ondrasek, Eric Galindo

Discovery of Two Genetically Distinct Clades of the Eyeworm Dirofilaria immitis Based on Mitochondrial DNA - Analysis of Global Dirofilaria immitis COX1 Sequences
Biology Research Experience with Professor Andrew Davinak

Nyima Bhuti '25, Chi-Ni Lin '23

Independent Study with Professor Christina Reppucci

Effects of Intra-Ventral Tegmental Area Oxytocin Receptor Blockade on Social Play Behavior in Juvenile Rats

Juvenile social play is a highly rewarding and motivated behavior expressed by nearly all mammals. The ventral tegmental area (VTA) is implicated in social motivation, but its involvement in juvenile social play behavior is not well understood. In this study using juvenile male and female Wistar rats, we investigated the role of intra-VTA oxytocin signaling in social play behavior. On two test days, experimental subjects received counterbalanced bilateral intra-VTA injections of L-368,899 (a selective oxytocin receptor antagonist) or saline, then 20 min later a novel age- and sex-matched rat was placed into their homecage and videotaped for 10 minutes to observe social play. Experimental subjects were then immediately placed into an open field test for 5 min to examine locomotor and anxiety-like behaviors. There were no significant differences in social play or locomotor behaviors between rats who received L-368,899 and those who received saline. However, there was a significant interaction between drug and sex for anxiety-like behavior; L-368,899 decreased anxiety-like behavior in females, but increased anxiety-like behavior in males. Future studies will further examine the potential sex-specific role of intra-VTA oxytocin signaling on anxiety-like behavior by agonizing intra-VTA oxytocin receptors.

Taylor Couto '23, Dakota Monegro '23, Marley Reed '24, Abby Rogers '24

A Classroom Project in Anthropology with Professor Hope Bastian

CounterCanon Theorist Card Game

CounterCanon: Anthropology Edition *is an educational card game designed to expand players' knowledge of anthropological theory. This deck features seventeen diverse individuals ranging from the 19th century to the present, and focuses primarily on BIPOC and women/femme theorists. Learn about their contributions to the field and construct a counter-canon of radical ideas!*

Alexa DiCenso '25, Delia Knox '25, Emerson Stout '25, Darin Sweet '25

Research Experience in Biology with Professor Laura Ekstrom

Does it Skate? Movement of Skates as Indicated by Skeletal Growth

Anthony Gatti, Chi-Ni Lin, Lily Tobin

Independent Research with Professor Tony Tong

Predictive Modeling of Critical Business Decision-Making Amid Russia-Ukraine War

Since the invasion of Ukraine by the Russian forces, companies around the globe have announced plans to withdraw or suspend their business operation in Russia. However, making such a decision has a substantial economic impact on the company and is far-reaching on the global economy. To better understand how the decision was made and what factors may have influenced such critical decision-making, we analyzed a wide range of factors that could affect a company's decision-making and reported our findings.

In this study, we collected data from various sources and created business profiles of 1,329 world-leading companies with a total market capitalization of 48.44 trillion, which accounted for approximately 39.7% of the global market. Each company profile includes information such as industrial classification, business operation in Russia, ESG risk rating, and financial performance. Among them, 760 companies (57.2%) announced their suspension or withdrawal and 569 companies (42.8%) remained in Russia. We analyzed and identified the top three factors that influenced a company's decision, including the headquarters country, industrial sector, and business exposure in Russia. We found that the remaining companies on average tend to have higher revenues and larger workforces than the companies that are exiting Russia. Companies in the EU that are directly threatened by Russia's military power are more likely to withdraw their business compared to companies in the U.S., Japan, and other NATO countries. Furthermore, we built a logistic regression model to predict whether a company will cease its business operation in Russia based on select factors. The preliminary results indicate that our model can predict such decisions with high accuracy. This study can also help companies understand and make informed critical business decisions in future conflicts.

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Chris Kombo '23, Trisha Harithsa '25

Independent Study with Professor Bob Morris

Investing Metabolic Purification of Human CMs Using Lactate-Based Tissue Culture Media

An investigation on the metabolic purification of human cardiomyocytes using a lactate-base issue culture in the hope of decreasing the amount of cardiac fibers and increasing the amount of cardiomyocytes present in the culture.

Academic Festival Events

(These events happen at other days/times and places. Please read the descriptions for details).

Theater and Dance

Crossroads is a mixed repertory dance concert presented by the Wheaton College Dance Company with choreography by faculty, students and guest artists. Presented in Weber Theatre, April 20-22nd at 7:30pm.

Participants:

Jia Fitzgerald '23
Ellie Guerin '23
Abi Twigg '23
Eve Poliskey '24
Syd Alves '25
Nat Gibbs '25
Emerson Stout '25
Addie Busacco '26
Cassie Heleen '26

Theater and Dance

I Am Made of Stories, an honors thesis written, performed, and directed by Morgaine Kmen.

Thursday, May 11 at 7:30pm.

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Theater and Dance

Theater and Social Change: Final Project Showcase

Join us as students share original creative work in response to a variety of issues they are personally passionate about from addiction to divorce to living with ADHD and celebrating Queer identity. April 27, May 2, and May 4 from 11-12:20 in Watson 10

Participants:

Ka-Niesa Anderson-Blackshear
Hannah Abraham
Hannah Balaam
Sofie Waters
Sofia Knopf
Emma Bradshaw
Colin Bourget
Simon Stanton
Bessie Reina Figueroa
John O'Meara
Joey Del Santo
Morgaine Kmen
Sebastian Olivera Velez
Lily Watson
Jordan Jensen
Jernora Gross
Elias Cowie
Emily Carmel
Tess O'Brien
Sven Stenroos
Malory Sheridan

(dis)connect: a moment in time
2023 Senior Art Exhibition

Visual Art

Visual Art students (and this year the first design major) will showcase their art works created this year in the Beard and Weil Galleries from April 20th-May 12th as part of their capstone experience.

Kajsa Brown Morrison
Matthew Cahill
Isabella Chamberlin
Jenna D'Alessandro
Julia Farinacci
Conakry Howard-Rogers
Emmanuel Leal
Shiyu Li
Mairen O'Neill
Maia Young Ondrasek
Kaila Riddle
El Thomas O'Brien

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Biology Research Experience

Wednesday, May 3, 2:30-4:00
Thursday, May 4, 11:00-12:30
Diana Davis Spencer Café

Students enrolled in the Biology Research Experience & Science Communication Courses will be presenting their semester-long, discovery-based research projects to the public. Topics include using DNA barcoding to speciate unidentified marine animals and comparative skeletal biomechanics of skates and rays. Come show support for our students' hard work!

Participants:

Izabella Agraz
Nyima Bhuti
Alexa DiCenso
Abby Fernandes
Miles Friedlander
Charlotte Gedraitis
Darin Johnson-Sweet
Sarah Joyce
Johann Klassen
Delia Knox
Jack Kriz
Leanna McAuliffe
Erin McMurray
Kyle Odoms
Daksha Ponappa
Charlie Racine
Khalid Rasouli
Jillian Rohon
Gray Severud
Ava Sheedy
Kilee Sherry
Gabriella Smart
Amelia Sobieski
Emerson Stout

Memes vs Motifs: Visual Responses to the Conventions of the Romance Genre
Presented by the students of GLAM 272 and 372: What's So Ancient about Ancient Novels?

Location: Filene Center, Main Atrium

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Senior Recitals

In their senior recitals, our music students present their culminating solo performances at Wheaton.

In Violin	
Margaret Whitcomb	April 23, 5:00 in Cole Chapel
Charlotte Brill	May 5, 5:30 in the Woolley Room in Mary Lyon
In Voice	
Bethany Tetrault	April 29, 3:00 in Weber Theatre
Natam Chalem	May 6, 3:00 in Cole Chapel

Wheaton Academic Festival Acknowledgements

For Academic Festival 2023, we would like to express our gratitude for the efforts of Alisha Ouellette for her work on the program.

Special thanks are especially due to the staff who dedicated their time and energy to this event: Jessica Kuszaj, Missy Lattanzio, Leanna Lawter, Dipankar Maitra, Karen McCormack, Max Ponticelli, Dolores Radlo, Alison Ricco, Angie Sarhan, and Tony Tong.

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