
HACKLEY RESEARCH SYMPOSIUM 2025
03
A night of presentations led by the students from the Independent Research Programs for English, History, and Science, along with the Russ Hogg grantees.

Welcome to the 4th Annual Hackley Research Symposium. Tonight, you will hear presentations that represent a year or more of independent research. We are incredibly proud of the high-quality work the students have achieved and know you will be impressed with them too.

In this program booklet, you will find program descriptions, room assignments for each student that is presenting, a short synopsis of their work, along with student profiles for our seniors.

Schedule of Events

7:30pm **Opening Remarks | Allen Memorial Hall**

7:45pm **Session I* | Saperstein and Science Classrooms**

8:15pm **Break**
Light refreshments served in Allen Memorial Hall

8:30pm **Session II* | Saperstein and Science Classrooms**

* We respectfully ask you stay in a single room for an entire session so as not to disrupt the student presentations.

Table of Contents

Cover artwork hand drawn by Zion Bennett (Russ Hogg Grant Holder '26)

Independent Science Research Program (ISRP)

The ISRP provides students with a passion for science the opportunity to participate in authentic scientific research in a genuine setting. This three-year program is designed to give students first-hand experience in conducting research, thus bridging the gap between a traditional high school science curriculum and the process behind real-world scientific discoveries. Students in the program spend each summer after sophomore and junior years working closely with research scientists to conduct self-designed experiments, either in academic, medical or industrial labs. The program culminates with the students submitting their results to regional, national and/or international science and engineering fairs.

The 2024–2025 school year marks an exciting milestone—the 10th anniversary of our Science Research Program! Over the past decade, the program has empowered students to explore their passions through hands-on scientific research, fostering curiosity and a spirit of discovery. We're proud to celebrate 6 cohorts of dedicated students, 28 graduates, 6 published research papers, and numerous accolades at regional, national, and international science fairs. We've also had the honor of hosting over 50 accomplished scientists, whose inspiring talks have left a lasting impact on our students. We are deeply grateful to all of them, and we extend special thanks to John Gannon and the Advancement team for helping us connect with alumni and community scientists who made many of these visits possible. Here's to a decade of discovery—and many more ahead!

Sophomores

Cooper Ho
Emi Dotter Tse
Gabriel Fossner
Isabella Zeltser
Layan Sow
Leila Ibrahim
Pierce Roc-Sennett
Sebastian Jiminez
Sophia Atkins
Tommy Kendall

Juniors

Annie Sheikh
Elan Suttiratana
Ethan Deng
Jacob Nadol
Macey McLane
Nima Jones
Obinna Nnamdi
Phillip Ianchulev
Shikhar Misra
Sophie Huang

Seniors

Alicia Zhu
Arjun Virk
Matthew Gluckman
Rafael Castro
Trashgim (Jimmy) Mulosmani
Vivek Malik

STUDENT	ROOM	SESSION
Alicia Zhu	S117	I
Annie Sheikh	S213	I
Arjun Virk	S118	I
Cooper Ho	S120	II
Elan Suttiratana	S213	II
Emi Dotter Tse	S118	I
Ethan Deng	S213	II
Gabriel Fossner	S218	I
Isabella Zeltser	S213	I
Jake Nadol	S117	I
Layan Sow	S213	II
Leila Ibrahim	S120	I
Macey McLane	S118	II
Matthew Gluckman	S120	I
Nima Jones	S120	II
Obinna Nnamdi	S118	II
Phillip Ianchulev	S120	I
Pierce Roc-Sennett	S117	II
Rafael Castro	S120	II
Sebastian Jimenez	S117	I
Shikhar Misra	S218	I
Sophia Atkins	S118	II
Sophie Huang	S118	I
Tommy Kendall	S218	I
Trashgim (Jimmy) Mulosmani	S213	I
T. Mulosmani & V. Malik	S117	II
Vivek Malik	S117	II

Science S117

Session I (7:45 – 8:15)

A Neural Decoding Approach for Age-related Dedifferentiation in Instructed Learning
Alicia Zhu '25

I used machine learning techniques to study the effects of healthy aging on our ability to perform novel tasks from instructions.

CRISPR-Mediated NKG2A Knockout to Increase Natural Killer Cell Cancer Defense
Jake Nadol '26

Many cancers over-express HLA-E, a ligand which deactivates NK immune cells when bound to a specific receptor. The goal is to use targeted gene editing to "knock out" the receptor that HLA-E binds to, making cancer less resistant to NK cells.

Injection of APOE iPSC-derived neurons in mice hippocampus with the effects of LINGO2KD
Sebastian Jimenez '27

I'm studying the effects of Alzheimer's Disease pathology in vivo. I'm planning on injecting neural progenitor cells with genetic predisposition to Alzheimer's via the APOE gene into the hippocampus of mice brains to examine the microenvironment these cells may be affected by.

Session II (8:30 – 9:00)

Targeting Plexin D1 to modulate macrophage behavior and activity
Vivek Malik '25

My research centers around targeting a protein to modulate the behavior of macrophages, which presents a potential treatment for cancers and heart disease.

Identifying a Novel Inhibitor of PAD4 to Treat Rheumatoid Arthritis
Trashgim Mulosmani, Vivek Malik '25

We employ a robust computational workflow including pharmacophore modeling, molecular docking, and molecular dynamics simulations to identify a novel inhibitor of the PAD4 enzyme to treat rheumatoid arthritis.

The Behaviours Behind Water Conservation
Pierce Roc-Sennett '27

I am studying the behaviors and economic backgrounds of people that factor into the conservation and waste of water.

Science S118

Session I (7:45 – 8:15)

Comparing Carbon Capture Technologies: A Cost and Environmental Impact Assessment
Arjun Virk '25

I am evaluating the environmental and economic impacts of different types of carbon capture in the cement industry. To do this, I created a financial model looking at all the costs related to the implementation, and ran a life cycle assessment of the technologies to see their impact in various environmental impact categories.

Modeling a mechanism for cancer immortality in a yeast model
Sophie Huang '26

I am investigating a mutation in a crucial protein interaction that may promote cancer immortality.

CRISPR-Based Gene Therapy for Lactose Intolerance
Emi Dotter Tse '27

This project uses CRISPR gene editing to modify the lactase gene and develop a long-term solution for lactose intolerance.

Session II (8:30 – 9:00)

Knowledge Graph for Gene, Protein, and Cell Line Relationships
Obinna Nnamdi '26

I am working on developing a knowledge graph to map the biological components of cells and relating that research to treating cancer.

Enhancing Sensitivity of a Protein-Detecting Polymer Sensor for Liver Disease Diagnosis
Macey McLane '26

I improved a simple, affordable liver disease test by enhancing its sensitivity, enabling it to differentiate between mild, moderate, and severe stages of the condition.

Lithium Ion Battery Recycling Using Bioleaching Method
Sophia Atkins '27

I am studying ways to eliminate the environmental, economic and human safety risks and impacts that come with the recycling of lithium-ion batteries. More specifically, I am studying ways to do this using a method called bioleaching.

Science S120

Session I (7:45 – 8:15)

Leveraging LLM-Driven Holistic Summaries for Enhanced Biopharma Company Classification

Matthew Gluckman '25

This research project aims to revolutionize the classification of biopharma companies by integrating domain-specific financial and pipeline data with the advanced natural language understanding capabilities of large language models.

AI-powered motor function analysis in a *fezf2* knockout Cerebral Palsy model

Phillip Ianchulev '26

This research quantifies motor behavior in rodents with and without *fezf2* using an AI deep learning model to detect subtle motor skills beyond human observation during a narrow beam task that requires precise coordination. Understanding the *fezf2* gene can help develop a novel treatment for Cerebral Palsy in humans.

Combination therapies in treating relapsed Acute Myeloid Leukemia

Leila Ibrahim '27

The theoretic application of an anti-CD30 antigen receptor against CD30+ mycosis fungoides to specifically stimulate T-cells and eliminate CD30+ cancer cells.

Session II (8:30 – 9:00)

Identi-Fi: Wi-Fi Sensing for Sign Language Recognition using Machine Learning

Rafael Castro '25

My project focused on developing a novel unsupervised machine learning framework to classify sign language gestures from Wi-Fi data.

Predicting the Progression of Mild Cognitive Impairment to Alzheimer's Disease Using a Genome-Wide Association Study on Quantitative Traits

Nima Jones '26

The purpose of my research was to find genes associated with faster or slower progression of mild cognitive impairment to early- or late-onset Alzheimer's Disease.

Optimal Estimation: Evaluating A Bayesian Method For Exoplanet Atmospheric Characterization

Cooper Ho '27

This research evaluates the application of Optimal Estimation (OE), assessing its potential for analyzing exoplanet atmospheres from spectral observations.

Saperstein S213

Session I (7:45 – 8:15)

Using Deep Learning to Improve Outcomes in Non-Small Cell Lung Cancer

Trashgim (Jimmy) Mulosmani '25

My project uses various different deep learning models in order to analyze patient imaging in order to predict patient outcomes and improve treatment strategies.

Identification of Mitochondrial Differences Between Healthy and Bipolar Brain Cells

Annie Sheikh '26

I'm working to identify specific mitochondrial abnormalities in brain cells of those suffering from bipolar disorder to help further improve the diagnosis and treatment of the disorder.

Advancing Early Detection and Treatment of Parkinson's Disease

Isabella Zeltser '27

I am studying how Parkinson's disease progresses and exploring ways to improve early detection and treatment. By focusing on biomarkers, proteins in the blood that signal disease, I aim to help identify Parkinson's years before symptoms appear, which could lead to better treatments that slow or prevent its progression.

Session II (8:30 – 9:00)

Using multimodal language models for sociocultural language preservation

Elan Suttiratana '26

My research explores how AI can be used to fill in gaps in text given the rest of the text and other information about the text, like associated videos. More specifically, how we can achieve strong performance in this task with less time and resources.

Virtual AI Companion for Engaging and Personalized Autism Support

Ethan Deng '26

I am creating and implementing an interactive virtual AI human head model to solve the issue of accessible accompaniment for ASD children.

Investigation of materials and designs of desalination membranes

Layan Sow '27

Investigating integrated mycore desalination membranes to reduce fouling and improve efficiency of solar desalination systems.

Science S218

Session I (7:45 – 8:15)

Exploring the Higgs Potential Structure
Shikhar Misra '26

I use theoretical simulations to investigate the Higgs Potential in hopes of finding physics Beyond the Standard Model that can be verified experimentally to address the causes behind why certain particles interact with the Higgs field.

Qubits and Quantum Computing
Gabriel Fossner '27

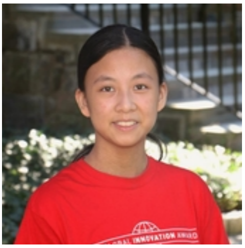
Currently, quantum computers are inefficient and this makes many of the other innovations in the field much harder to give a practical use. I hope to help solve part of this problem by implementing and comparing algorithms called quantum error correcting codes to make these computers more efficient.

Metal Uptake in Predatory Fish Caused by the Consumption of Menhaden
Tommy Kendall '27

I am researching the effects of consuming high metal bioaccumulation menhaden on predatory fish. The study should provide valuable information for the ecosystem-based fishery model.

Senior Science Research Student Profiles

Alicia Zhu



Field of study: Aging and Learning

Comparing brain activity patterns between younger and older adults during instructed learning.

I became interested in the brain after taking an introductory summer neuroscience course. I learned about brain cells (neurons) and was introduced to computational neuroscience research. After applying for IRP, I found a mentor willing to guide me through a project, and joined their lab as a research assistant. One interesting finding was that aging affects our ability to learn (specifically from instructions) more so than other abilities, such as visual processing and motor functions. Outside of science research, I enjoy competition math such as the American Math Competition, learning Latin and about ancient Rome and Greece, and playing the violin.

Arjun Virk

Field of study: Carbon Capture

I created an economic model and am running a life cycle assessment of three different carbon capture technologies to come to a conclusion on the most environmentally and economically feasible capture method.

I have always been interested in the environment from an early age, and transferring that passion into a scaled industrial environment. I started my work with MIT's Concrete Sustainability Hub, a group of professors in engineering, environmental science, and more as well as leaders in industry. My project focuses on evaluating the environmental and economic impacts of different types of carbon capture in the cement industry. To do this, I created a financial model looking at all the costs related to the implementation. I ran a life cycle assessment of the technologies to see their impact in various environmental impact categories. Outside of science, I enjoy playing squash and tennis, playing the saxophone, and volunteering whenever possible.

Matthew Gluckman

Field of study: BioPharma Classification with AI

I'm using AI to generate holistic summaries of pharmaceutical companies for smarter categorization.

As a senior at Hackley School, I am passionate about both the humanities and biotechnology. My fascination with language and context—nurtured through the Hackley Classics Program—inspired me to explore how narrative techniques could enhance scientific classification. For my independent research project, I developed an AI-driven framework that uses large language models to generate comprehensive summaries of biopharma companies—integrating financial and pipeline data—to more accurately classify them into categories like Big Pharma, Small Pharma, Early Biotech, and Late Biotech. By emphasizing contextual importance—such as prioritizing approved drug count over less critical metrics—this approach offers a lens on the rapidly evolving biopharma landscape. Outside research, I enjoy spending time with friends and playing varsity soccer and squash.

Rafael Castro

Field of study: Wireless Sensing

I developed a novel machine learning algorithm to interpret sign language using Wi-Fi signals.

After teaching myself how to code in middle school, I fell in love with computers. Through IRP, I have been able to create projects that can help people worldwide.

This past summer, I worked with the i-NRG lab at UC Santa Cruz to construct indoor localization systems using Wi-Fi signals. Reading relevant literature, I identified a key failing of state-of-the-art sign language recognition systems. Using my prior knowledge of machine learning, I created an autonomous system that can recognize sign language gestures without training data, making my system easily deployable and usable in a real-world environment.

Next year, I will be attending Caltech as a Mathematics and Computer Science major. I am passionate about machine learning and have growing interests in information theory, vector calculus, and quantum physics. Outside of IRP, I enjoy long-distance running and student government.

Trashgim Mulosmani

Field of study: Image Analysis/Drug Discovery

I have studied how to use deep learning to analyze patient imaging; also identified compounds to mediate effects of rheumatoid arthritis.

Since joining ISRP, I have always wanted to understand how AI can be used to aid in medical research. After taking introductory deep learning and AI in medicine courses, I started doing research in computational pathology, where AI can analyze patient whole-slide images and detect cells and their interactions. My first project was in segmenting, or detecting, cells in multiplexed imaging, with my second project in the field using deep learning to analyze tissue slides in non-small cell lung cancer. Also, I completed a drug discovery project where I found a small molecule to potentially treat rheumatoid arthritis. Outside of ISRP, I'm a thrower on the track team and a boarder. I'm looking forward to continuing science research in college and exploring science as a career.

Vivek Malik

Field of study: Cellular Immunology

I am researching how to target immune cells to treat immune disorders and cancer.

After reading the book *Immune* by Philipp Dettmer in 9th grade, I became deeply interested in how we can leverage our own immune system to fight disease. Upon joining IRP in 10th grade, I was accepted to the Regeneron High School Mentorship Program where I pursued immunology research for two years. My research centers around modulating the behavior and activity of a crucial white blood cell called the macrophage by targeting a protein on the cell surface. My results have implications for treating heart disease and cancer.

Outside of science, I enjoy swimming, fencing, and playing piano. I also enjoy learning languages and doing puzzles with my friends. In my free time, I like keeping up with domestic politics and enjoy listening to various political podcasts.

Independent Research in English (IRE)

IRE offers students the opportunity to conduct advanced research and writing at the college level under the guidance of Mr. James Flanigan. Students will develop their own topics or research questions, review the scholarly literature in the relevant discipline(s), understand and employ the research methodologies relevant to their research, and write on the research question, ultimately producing significant research essays.

Sophomore

Matthew Calderon-Nava

Juniors

Fiona Pedraza
Gabriela Nunes
Sam Sugiura

Seniors

Alessia Sorvillo
Angela Dea Croce
Annabel Previdi
Francesca Jones
Giulia Sorvillo
India Davis-Hanessian
Olivia Houck
Suka Nwiido

STUDENT	ROOM	SESSION
Alessia Sorvillo	S201	II
Angela Dea Croce	S207	II
Annabel Previdi	S204	I
Fiona Pedraza	S204	I
Francesca Jones	S204	II
Gabriela Nunes	S207	I
Giulia Sorvillo	S201	II
India Davis-Hanessian	S207	II
Matthew Calderon-Nava	S201	I
Olivia Houck	S204	II
Sam Sugiura	S201	I
Suka Nwiido	S207	I

Saperstein S201

Session I (7:45 – 8:15)

On the Bastardization & Fetishization of Philosophy through Video Gaming

Matthew Calderon-Nava '27

This essay will be exploring and analyzing the contemporary bastardization of philosophy and theory (particularly Stoicism) through comparison with ZA/UM's cult classic video game Disco Elysium.

Noise, Glitches, and Other Musical Absurdities: The Avant-Garde and Music

Sam Sugiura '26

An exploration of what the avant-garde music scene (and its offshoots) are and how they relate to and differ from "mainstream" music and politics, as well as how it permits an expression of different emotions.

Session II (8:30 – 9:00)

"Fueling the Haters": Zach, Why?

Giulia Sorvillo '25

"We'll always find our way back" --Zach Bryan. An investigation into "The Great American Bar Scene" and its intersections with the meaning of authenticity.

“Come and Play With Us”: Twins as the Ultimate Toys

Alessia Sorvillo '25

An exploration of the horror genre's use of the double trope, which allows singletons (non-twins) the imaginative opportunity to establish twins as entertainers.

Saperstein S204

Session I (7:45 – 8:15)

Desire, Marriage and the Case for a "Rural Existence" in Anna Karenina
Fiona Pedraza '26

"Wait I feel like if you took the Tolstoy out of it, it would almost be as if you're writing about... your own life?" An examination of the legendary novel, the human experience of romantic love and Tolstoy's theory on marriage, eros, and eco-philosophy.

Lingering in "Brackets": Liminal Space as a Prison
Annabel Previdi '25

According to the subreddit r/liminalspace, "A liminal space is the time between the 'what was' and the 'next." An exploration of the failure of absence or failure of presence when "bracketed" in a place intended to transition using Lethem's "The Fortress of Solitude" and other texts, as well as my own experiences on the New York City subway.

Session II (8:30 – 9:00)

Fox fox fox fox: Japanese folklore, real estate, & other miscellaneous topics
Francesca Jones '25

What are women really selling? An analysis of Aoko Matsuda's satirical feminist retellings of Japanese folklore in "Where the Wild Ladies Are", and its application in the real estate industry (plus future expansion).

To Spy is to Perform, and to Spy is to Exist
Olivia Houck '25

This paper explores how spies navigate the blurred line between authenticity and deception. Through the analysis and surveillance of many texts, spying reveals itself as not solely a means for dealing with national security but rather a deeply personal and universal human experience.

Saperstein S207

Session I (7:45 – 8:15)

Reality TV: The New Bedtime Story
Suka Nwiido '25

Whether it be the Brothers Grimm or Roald Dahl, our society makes a habit of indoctrinating moral compasses into our children at a ripe age. However, as society changes, what role does reality TV play as society's new authors?

Copy-Paste Culture: the Homogenization of Beauty and Personality in the Digital Age
Gabriela Nunes '26

An analysis of TikTok aesthetics and the standardization of beauty and personality. This essay explores how Jia Tolentino's concept of "Instagram Face" extends into a new era of curated sameness.

Session II (8:30 – 9:00)

"Literally Me"
Angela Dea Croce '25

Today, I break the first rule of Fight Club to save people from themselves. An examination of the impact "sigma" films have had on the modern man, and the complex gender arguments unearthed in their literary roots.

Take a Sip of The Kool Aid: Cults In The Media Today
India Davis-Hanessian '25

This paper dives into how social media and streaming services have become obsessed with the culture of cults and cultish groups. And the way that cults have changed in the 20th and 21st century in the world of social media.

Senior English Research Student Profiles

Alessia Sorvillo

Field of study: Twins in Horror

I explored the horror genre's tendency and motivation behind its frequent establishment of twins as toys.

After existing as a twin for almost 18 years, I've experienced many twin-related incidents. Beyond the usual moments where I've been called the wrong name, the motivation that others have to hold impromptu interviews about what it's like to be a twin and how my state of being a twin scares them has always fascinated me. At some point, my name can switch from Alessia to twin, and it's the blurring of identities and the real fear of twins that people have that has inspired my independent research of twins within the horror genre. Outside the classroom, I manage the Hackley girls' varsity basketball team and co-lead the Guiding Eyes for the Blind club. In my free time, I enjoy reading books (those good no-plot plot ones), going for walks, cooking, hanging out with friends, going to the beach, and drinking coffee (iced lattes and cappuccinos of course).

Angela Dea Croce

Field of study: The Mystery of Sigma Males

I explored the undertones of popular male-centered films and novels to help understand and combat the crisis of sigmas on the internet.

I have always been incredibly fond of storytelling. It is the word that encompasses music, film, theater, literature, and any other form of media that communicates truth. As such, I consume as many stories as possible to aid me in understanding current issues. As I have gotten older, the male ego has been a recurring issue. I try to enjoy Fight Club and its many intricacies, and there is a Reddit user rambling about how Tyler Durden is "literally him," completely misinterpreting the film to fit his narrative. My rage over this phenomenon led me to my favorite tool, analysis. My research has pulled together a variety of perspectives to shed light on hidden meanings of classic "film bro" media.

My other endeavors include Hackley Theater productions, attempting to play the piano, talking about films, and spending time with my family. I am always trying to absorb more stories.

Annabel Previdi

Field of study: Liminal Spaces

I explored interpretive liminal – or transitional – spaces in literature.

Since Kindergarten, I have commuted to school using any combination of the subway, city buses, and Metro North. My years of taking public transportation prompted my fascination with liminal spaces—transitional spaces that are not intended to be lingered in…and what happens when they are. I have applied this interest to two works of literature, specifically novels *The Fortress of Solitude* by Jonathan Lethem and *The Shining* by Stephen King. At Hackley, I am a member of the varsity field hockey team and I am a member of several community service clubs. In my free time, I enjoy reading, going on runs and bike rides, taking film photography, and playing and watching baseball (specifically the Yankees).

Francesca Jones

Field of study: Foxology

I am exploring feminist retellings of Japanese folktales involving foxes and their present day applications

One of my goals during my time in high school has been to pursue as many of my interests as possible. I love reading, and over the past couple of years, I've taken a deep dive into contemporary Japanese literature, leading to my decision to use IRE to further investigate and have fun making global cultural foxnections. At school, I enjoy working on The Vision -our amazing literary magazine- and being part of the fencing team (giving me a chance to hone in on that fox-like agility). In my free time, I love going to the beach, exploring restaurants and museums in New York, and spending time frolicking with my friends or my dogs.

Giulia Sorvillo

Field of study: ZLB Cross-pollination & Authenticity

I explored Zach Bryan's newest album in the quest for what authentic music means.

I have always listened to Country Music religiously and took this research paper as an opportunity to go beyond the surface and search for parallels between Bryan and other artists, to better understand what it means to call something authentic. I dive into Bryan, in addition to Bruce Springsteen, Elvis Presely, and the Blues world. I also spend some time talking about what Nashville stands for in the Country industry. Outside of the classroom, I enjoy spending time reading, going for nature walks, and hanging out with friends. Additionally, I manage the Varsity Girls Basketball team and am the Chief Design Editor for *the Dial*.

India Davis-Hanessian

Field of study: Cults in the media

An exploration into the impact of media on the popularity of cults, and the power that it gives to cults.

Outside of Independent Research in English I am on the golf team and have been a competitive skater for the past ten years, and have been at Hackley since 2nd grade. During my time at Hackley I have gotten mostly involved in the sciences, taking almost every science class I can. However this year I decided to dive into the world of the English department, and take Independent Research in English. For my Independent Research Project I decided to dive into the world of cults, at their evolution since the introduction of mass and social media. Along with that, the rise of cultish groups that have been bred out of groups like SoulCycle and CrossFit.

Olivia Houck

Field of study: Spying and Moral Conflicts

I explored how spies navigate authenticity and deception in regards to national security issues and deeply personal ones.

Throughout my time at Hackley, I have enjoyed reading, writing, and discussing a variety of topics in my humanities classes. Being able to explore a topic deeply when it was time to write essays was always something I found pleasure in; so, to end my time at Hackley, I thought it would be fitting to research and analyze a topic of my choice in depth. Outside of my academic studies, I enjoy co-leading my school's International Film and Analysis Club (IFAC), taking photos in Manhattan and Westchester, going on walks, visiting museums, reading, journaling, and exploring new places. I love spending time with my family, friends, and my two dogs, David and Stella.

Independent Research in History (IRH)

IRH offers students the opportunity to conduct advanced research and writing at the college level under the guidance of Mr. Stephen Fitzpatrick and Mr. Andy King. Students develop their own topics or research questions, review the scholarly literature in the relevant discipline(s), understand and employ the research methodologies relevant to their research, and write on the research question, ultimately producing significant research essays or other summative projects.

Juniors

Andrew Carpenito
Charles James Sheehan
Isaac Ahn
Jiya Dhakad

Juniors (cont.)

Mason Lee
Rohan Krishna
Sarah Rotenberg
Skylar van Eck

Seniors

Aran Basu
Dylan Firooznia
Jack Perlman
Lucia Butterfield
Rowan Salemi

STUDENT	ROOM	SESSION
Andrew Carpenito	S212	II
Aran Basu	S212	I
Charles James Sheehan	S112	I
Dylan Firooznia	S212	I
Isaac Ahn	S113	II
Jack Perlman	S113	II
Jiya Dhakad	S212	II
Lucia Butterfield	S210	II
Mason Lee	S210	I
Rohan Krishna	S112	I
Rowan Salemi	S113	I
Sarah Rotenberg	S210	I
Skylar van Eck	S210	II

Saperstein S112

Session I (7:45 – 8:15)

Responsible Tourism through Mountain Biking

Charles James Sheehan '26

Mountain biking as seen in Charlemont, MA, Whistler, BC, and suburban Detroit, MI is a useful tool for responsible tourism and mountain biking in America could be a model for other modes of sports tourism.

Chess and its Ancestors: A Historical Journey from Ancient Chaturanga to Modern Play

Rohan Krishna '26

From its inception in the Indus River Valley to modern day, this presentation examines the critical moments in the evolution of Chess to answer the question of how a game that has been around for over 3000 years has been able to survive, travel, adapt, and thrive in different civilizations and societies across history.

Saperstein S113

Session I (7:45 – 8:15)

Apollo 1 and STS-51L; NASA's disasters and their varying impact on the Space Program

Rowan Salemi '25

This project will try to answer why the responses between the Challenger and Apollo 1 disasters differed, and what external factors contributed to each response.

Session II (8:30 – 9:00)

Wagner: Hitler's Playlist for the Third Reich

Isaac Ahn '26

This project explores how Wagner's nationalist ideals, exemplified within his music, were co-opted by Hitler and the Nazis as propaganda in modern media to reinforce their ideologies of German nationalism and superiority.

Thomas Paine Impact on French and American Revolution

Jack Perlman '25

Thomas Paine was a political writer whose works, like Common Sense and The Rights of Man, inspired democratic movements in both the American and French Revolutions.

Saperstein S210

Session I (7:45 – 8:15)

Fusionism Ascendant: The Post-Watergate Conservative Revolution

Sarah Rotenberg '26

My paper explores how conservative Republicans consolidated power after Watergate and, culminating in Ronald Reagan's 1980 election, advanced fusionist ideology that reshaped the party.

Factors Behind the Canonization of Composer Florence Price

Mason Lee '26

I aim to investigate how the resurgence of interest in the music of Florence Price has reshaped her legacy, and what an analysis of her complex history and musical style reveal about her impact on the canon of American classical music.

Session II (8:30 – 9:00)

German Reunification Reconsidered: Economic Policy and Its Social Costs

Skylar van Eck '26

This paper examines how economic policies implemented during German reunification (1989–1995) affected social integration and national identity. It argues that while these policies aimed to stabilize the East, they often worsened inequalities and left lasting divisions between East and West Germans.

The Miniskirt: An Analysis of Feminist Fashion

Lucia Butterfield '25

Explores Mary Quant's miniskirt and the complexity of its role in feminist movements of the 60's and 70s.

Saperstein S212

Session I (7:45 – 8:15)

Dehumanization of POWS in Vietnam

Dylan Firooznia '25

I am studying the treatment of American POWs during the Vietnam War by the Northern Vietnamese and how the conditions during imprisonment impacted them in a manner that differed from previous POW experiences such as World War II.

Ethnomusicology and South Asian Studies

Aran Basu '25

I have been researching work songs in rural Bengal and learning about their ties to the Naxalite movement as well as other moments of social upheaval.

Session II (8:30 – 9:00)

Women from Domestic to Political Positions in India's National Movement

Jiya Dhakad '26

The objective of my documentary is to inform people about Women in India's National Independence Movement, and how they transformed from domestic to political positions. Additionally, the documentary uses the Satyagraha (the Salt March) as a case study to discuss their transition between positions.

Unseen Forces Behind the American Revolution

Andrew Carpenito '26

My research examines how economic self-interest and leadership challenges (mainly through military actions) influenced key events of the American Revolution, revealing why these factors have been overshadowed by ideological narratives in historical analysis

Senior History Research Student Profiles

Aran Basu

Field of study: Ethnomusicology and South Asian Studies

I have been researching work songs in rural Bengal and learning about their ties to the Naxalite movement as well as other moments of social upheaval.

I began this project focusing initially on women farmers in India, which led me to the discovery of work and protest songs sung by farmers in rural Bengal. These songs, carried through fields and villages, relay their struggles and the ways in which they have overcome them. I wanted to set this against the historical backdrop of the Naxal movement, the IPTA's cultural revolution, and the enduring spirit of tribal women farmers, and capture the unfiltered voices of those who live the stories they sing. I collected film in remote Bengal villages, and have intertwined these scenes with protest songs by IPTA members and renowned musical artists, reflecting the continuity of protest through music. Outside of this project, I enjoy participating in Male A Capella and the Chamber Ensembles as well as other musical endeavors outside of school.

Dylan Firooznia

Field of study: Prisoners of War in Vietnam

I have been researching Prisoners of War and the way they were treated throughout the Vietnam War

During my time at Hackley, the intricacies and facets of History have always caught my eye. My motivation to study American prisoners of war during the Vietnam conflict stems from my grandfather. His experiences as a POW and the stories he told me growing up pushed me to want to learn more and led me to this point. As a part of the independent research in history course, I have worked with Mr. Fiztpatrick and Mr. King to explore and expand my knowledge of this topic and take a deeper dive into my grandfather's world. Outside of IRH, I enjoy spending time with my friends, playing soccer, playing the clarinet and spending quality time with my family. I spend most of my time on the weekends hanging out with my brother or watching movies with my parents.

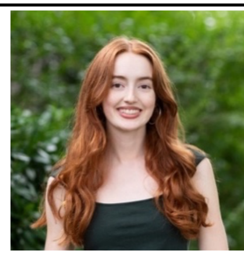
Jack Perlman

Field of study: Thomas Paine (5 words)

I have been researching Thomas Paine's impact on the French and American Revolution

I've always had a broad appreciation and interest in influential historical figures. My decision to focus on Thomas Paine specifically for this research project stemmed from an experience I had this past summer. After hearing of an opportunity nearby in New Rochelle to work at a Thomas Paine Museum, I quickly reached out to the man who worked there and became involved. I spent part of the summer learning about Thomas Paine and working at the museum, so the building could stay open, and I could help guide whoever came in. My fascination for Paine increased greatly from this endeavor, leading me to want to learn more this year. Outside of history, I enjoy spending time with friends and family, playing soccer and basketball, and attending live performances. In my free time, I also like to play chess or do just about anything with my twin brother.

Lucia Butterfield



Field of study: Fashion Politics and Feminism

I explored the feminist history of the 1960s and 70s with particular emphasis on the miniskirt and its impact.

I have always loved fashion. As an artist, and creative person in general, clothes have always served me as an additional artistic medium, and caught my attention in books and popular media. In the process of writing this paper, I have come to realize its importance not only as a means of self expression, but as a lens through which to view and analyze history. The miniskirt is a polarizing silhouette that serves as a case study for fashion's role within the larger history of cultural norms and political movements. The iconic trends of the 1960s and 70s are forever tied to the history of the Women's Liberation Movement and second-wave feminism, and this is a relationship that I find fascinating and wanted to pursue further.

Rowan Salemi

Field of study: NASA Space Program

I have been researching the difference in impact to the U.S. space program the Apollo 1 accident had compared to the Challenger Accident

As a member of the Class of 2025, my love for space and space exploration has always been something that I have wanted to explore throughout my time at Hackley. After spending much of the summer reading and watching documentaries about various Space endeavors of the United States, I have always wondered why our space program does not exist in the same capacity it did 50 years ago. Through my quest to discover why, I stumbled upon the Challenger and Apollo 1 disasters, and have dove deeply into the reasons why these accidents had such a large impact on the program. In my free time I like to golf, row, read, and talk to friends/family.

Independent Research in Oral History & Storytelling

Students explore how memory shapes our understanding of the past through the creation and interpretation of oral history under the guidance of Ms. Jenny Leffler and Ms. Melissa Stanek. The first part of the course focuses on building interview skills through both hands-on practice and the study of interview-based works like podcasts and documentaries. In the latter part of the course, students design and carry out an inquiry-based project rooted in their own original oral history research. These projects might include a documentary-style film or podcast, traditional research paper, or a journalistic or literary piece. Put another way, students will learn how to listen to people's stories in order to tell a story of their own.

Freshmen

Charlotte Swain Cantor
William Sevilla
Zaira Sammi

Sophomores

Beatrix Mackil
Gemma Lasky
Gia Clark
Owen Spencer

Junior

William Linnett

Senior

Charlie Perlman

STUDENT	ROOM	SESSION
Beatrix Mackil	S101	I
Charlie Perlman	S111	*
Charlotte Swain Cantor	S102	I
Gemma Lasky	S101	I
Gia Clark	S101	II
Owen Spencer	S101	II
William Linnett	S104	II
William Sevilla	S104	II
Zaira Sammi	S102	I

*Charlie's project is a display in S111, to be visited outside of the main sessions.

Saperstein S101

Session I (7:45 – 8:15)

Sponges & Song: Exploring Community in Tarpon Springs
Beatrix Mackil '27

A documentary-style short film exploring the evolution of the community in Tarpon Springs, Florida, through the lenses of commerce, religion, and what it means to belong

Do You Hear the People Sing? Protest Art During Hong Kong's Umbrella Movement
Gemma Lasky '27

An examination of the protest art created by activists in a region of waning democracy as they fought for universal suffrage.

Session II (8:30 – 9:00)

Food for Thought: Exploring Cultural Identity Through Cuisine
Owen Spencer '27

A compilation of recipes and stories that seeks to explore the role that food plays in shaping cultural and familial identities.

After the Storm: Examining Impacts in New Orleans After Hurricane Katrina
Gia Clark '27

My project will cover the period of rebuilding in New Orleans with a specific focus on culture, music, education and the economy.

Saperstein S102

Session I (7:45 – 8:15)

Beyond the Mission Statement: DEI at Hackley Through Real Voices
Zaira Sammi '28

Constructed through interviews with students and faculty, this documentary-style video explores Hackley's DEI policies and "ideal culture", and how this is reflected through the experiences of those within the Hackley community.

Battlefields and Home Fronts: My Grandparents' Vietnam Story
Charlotte Swain Cantor '28

A series of interviews with my grandparents, Thomas and Jeanne Swain, turned into a photo book encapsulating the harsh reality of fighting in the Vietnam War and the struggle for the families left behind.

Saperstein S104

Session II (8:30 – 9:00)

Echoes of Apartheid: Anecdotes of a Single Family
William Linnett '26

This project takes a deep dive into how apartheid ideals have an everlasting effect on those who lived during its era. The goal is to create a full picture by interviewing different generations, races, and ideals.

Becoming a Nora: Poems From My Grandmother's Life
William Sevilla '28

A book of works illustrating and honoring my grandmother's upbringing as an Irish postulant and her path to adulthood, finding her place in American society.

Saperstein S111

Display throughout the evening

Humans of Hackley
Charlie Perlman '25

In my project, I want to explore and share the stories of members of our Hackley community. Everyone has their own story and my project seeks to help bring people's stories to light through photography and interviews.

Senior Oral History Research Student Profile

Charlie Perlman

Field of study: Humans of Hackley

I interview and photograph members of the Hackley community about/doing their job.

Ever since I joined Hackley in third grade, I knew that the main thing that made Hackley special was the people. I've come to know teachers, coaches, administrators, and students with vastly different journeys to the Hilltop. Apart from my love of writing features that helped me reach Editor-in-Chief of *the Dial*, I've always loved photography. I founded the Sports Photography Club with a couple of friends sophomore year to help document Hackley athletic games, but quickly found that my skills could be applied to my Oral History project. Documenting the stories of Hackley community members and taking photos of their day-to-day jobs has been incredibly interesting, but more importantly fulfilling. Outside of storytelling, I have loved my time playing on Hackley's basketball and lacrosse teams.

Russ Hogg Grants for Creative Expression

Russ Hogg Grants for Creative Expression provide an opportunity for students to further their interest in creative expression and innovation in ways that fall outside the normal course offerings at Hackley. Jason '89 and Alexandra Hogg P '19, '22 established The Russ Hogg Endowment for Creative Expression to honor the life's work of Russ Hogg, Jason's father and a former Hackley trustee. The Hoggs' philanthropic leadership inspired friends and family to join them in creating this endowment in Russ's name to foster creativity and innovation in myriad forms and fields, including technology, the creative arts (performing, visual, and digital), science, entrepreneurialism, global challenges, and interdisciplinary inquiry.

8th Grade

Alexandra Baldwin

Freshman

Elleana Derby

Juniors

Cara Minello
Isaac Ahn
Mason Lee
Rohan Krishna
Zion Bennett

Seniors

Aran Basu
Jasper Quattrone
Vivek Malik

STUDENT	ROOM	SESSION
Alexandra Baldwin	S109	I
Aran Basu	S109	II
Cara Minello	S107	II
Elleana Derby	S107	I
Isaac Ahn	S109	I
Jasper Quattrone	S109	II
Mason Lee	S107	II
Rohan Krishna	S107	II
Vivek Malik	S107	I
Zion Bennett	S107	I

Saperstein S107

Session I (7:45 – 8:15)

Analysis of Unaccompanied Minor Arrival and Placement Trends in Westchester County

Vivek Malik '25

I analyzed a massive Department of Health and Human Services of unaccompanied minor arrival and placement trends in Westchester County to uncover trends in where these minors are living, who they are released to, and to ultimately determine the most effective use of resources to best accommodate them.

Animating Anxiety

Zion Bennett '26

Combining an interest in cartooning with advocacy around stress and anxiety in the lives of teenagers, Zion will interview peers about their challenges with anxiety and create cartoons that "weave humor, empathy, and helpful tips."

A Symphony of Violence

Elleana Derby '28

This project will culminate in the composition of a song for two violins. One violin will represent gun violence in America over several decades and the second violin will represent gun violence in other parts of the world over the same time period.

Session II (8:30 – 9:00)

Growth Over the Board: An Introspective look through chess puzzles

Rohan Krishna '26

Published a book of chess puzzles drawn from games that I have played since the age of six. The book also contains insights into a young player's mindset, while providing tools to help others in similar situations.

Exposure: An Adapted Short Film

Cara Minello '26

A short film based on the play "Exposure" by Vishesh Abeyratne on internet culture, social media, and cyberbullying, casting Hackley students screened for the Upper School. The screening will be followed by a presentation on social media by the Westchester District Attorney's office.

Music Composition in the Age of AI

Mason Lee '26

An exploration of how Artificial Intelligence will impact the creative process.

Saperstein S109

Session I (7:45 – 8:15)

Where the Seasons Tell Their Stories

Alexandra Baldwin '29

A set of four paintings that illustrate different scenes on the Hilltop. Inspiration for the four paintings will come from research in the Hackley archives.

A Songbird's Symphony

Isaac Ahn '26

A fun, free online music course and vocal guide, plus live lessons, bringing music to underserved communities!

Session II (8:30 – 9:00)

The motor inn - a short film

Jasper Quattrone '25

A short film inspired by the poem "Looking for the Gulf Motel" by Richard Blanco, read in sophomore year. The story captures a poignant nostalgia through evocative visuals as we explore a young woman's memories and her journey to find closure.

From Hammers to Harmonies

Aran Basu '25

This project will culminate in the creation of a documentary film that centers on the work songs of Indian farmers.

Senior Russ Hogg Grant Student Profiles

Aran Basu

Field of study: Ethnomusicology and South Asian Studies

I have been researching work songs in rural Bengal and learning about their ties to the Naxalite movement as well as other moments of social upheaval.

I began this project focusing initially on women farmers in India, which led me to the discovery of work and protest songs sung by farmers in rural Bengal. These songs, carried through fields and villages, relay their struggles and the ways in which they have overcome them. I wanted to set this against the historical backdrop of the Naxal movement, the IPTA's cultural revolution, and the enduring spirit of tribal women farmers, and capture the unfiltered voices of those who live the stories they sing. I collected film in remote Bengal villages, and have intertwined these scenes with protest songs by IPTA members and renowned musical artists, reflecting the continuity of protest through music. Outside of this project, I enjoy participating in Male A Capella and the Chamber Ensembles as well as other musical endeavors outside of school.

Jasper Quatttone

Field of study: Marketing & Film

I directed and produced a short film this summer; did post-production using Adobe Premiere Pro during the school year.

My highschool experience has been woven with great experiences in the film industry from a 4-week summer program at Boston University (BUAMP), to Mr. Green's Intro to Filmmaking and Ms. Bottalico's Advanced Photography and Digital Design. My passion for filmmaking comes from a desire to tell stories through beautiful visuals. My most recent film—inspired by a Richard Blanco poem—brings ideas of nostalgia and childhood to the screen. My other areas of interest include: weightlifting, music, entrepreneurship, and spanish language. I am a hard worker and a fast learner. My ability to adapt to new environments whether that be a 10-hr shift the Provincetown Portuguese Bakery or a 12-hr day on set, I have learned to navigate stressful situations with grace.

Vivek Malik

Field of study: Public Policy

I am researching arrival and placement trends of unaccompanied minors in Westchester County

Having been part of the community of Mount Kisco for my entire life, I have had the privilege of working with immigrants through community organization Neighbors Link's legal services and ESL tutoring programs, which prompted my interest in pursuing my Russ Hogg Grant project. For my project, I analyzed a dataset released by the Department of Health and Human Services regarding arrival and placement trends of unaccompanied minors in the United States. I focused my analysis on Westchester County, and used the analysis to inform policy recommendations for Westchester County government and community organizations like Neighbors Link. Outside of my project, I enjoy swimming, fencing, and playing piano. I also enjoy learning languages and doing puzzles with my friends. In my free time, I like keeping up with domestic politics and enjoy listening to various political podcasts.