



A Kenyon Showcase

CELEBRATING HIGH-IMPACT PRACTICES AT KENYON

04.05.18



Your CHIPs Passport

As you visit the stations throughout the Kenyon Athletic Center, collect stickers at each station, add them to this page, add your name and contact information below and return this sheet at the exit for your chance to win prizes.

Collaborative Assignments or Team Projects	Common Intellectual Experiences	Diversity or Global Learning
First-Year Seminars or Experiences	Internships	Learning Communities
Senior Exercises, Honors Projects, or Capstone Courses	Service Learning, Community-Based Learning or Research	Undergraduate Research

Contact information

Name _____
 Email _____
 Phone _____

The third annual showcase of experiential learning at Kenyon demonstrates the progress on our Kenyon 2020 goal that all students have at least two high-impact experiences before graduating. More than 200 students are presenting their dynamic learning experiences at this year's CHIPs.

High-impact practices can be research projects, artistic performances, internships, community-based research, senior honors theses, off-campus study or collaborative assignments. These types of experiences get students to think rigorously outside of the traditional classroom and are called “high-impact” because data shows they improve student learning and prepare students for success after graduation.

Kenyon students already benefit from close collaboration with supportive faculty members. The presentations at this year's showcase illustrate how rigorous work that happens around a seminar table is being extended to include independent work outside of the classroom, collaborative research and experiences that empower students to put ideas into action.

Exhibitors

Kenyon Athletic Center 04.05.2018

Collaborative Assignments or Team Projects

- Wyatt Cole '19
- Jeremy Moore '19, Mackenzie Bruzzio '20, Natalie Twitchell '19, Karina Kunka '19, Weichen Zhao '20, Jordan Levin '19, Sarah Manz '19, Peter Reinhart '20, Ty Boyd '20
- Sam Grunder '19, Collyn Carpenter '21, Nat Henry '20, Autumn Gomez-Tagle '21, Schuyler Bunn '21, Brandon Byrd '18
- Austin Hulse '19, Rachel Nguyen '19, Kyle Rose '19, Bryce Wedig '18
- John Marino '19, Grant Carr '19, Noah Nash '19, Justin Clark '19, Jake Fisher '20
- Noelle O'Neal '21
- Amy Shirer '18 and Henry Uhrick '18
- Shayne Wagner '18, Sarah Hoffmann '20, Caroline Chang '18
- Jonah Edwards '18, Alma Urbano-Torres '18, Luisa Estrada '19, and Luis Platas '20
- Jess Alperin '18, Phoebe Pohl '18, Roberto Vasquez '19, Catherine Von Holt '19, Jamie Sussman '21, Cameron Peters '20, Quinn Adam '20

Common Intellectual Experiences

- Hannah Wedig '19

Diversity or Global Learning

- Devon Chodzin '19
- Alice Cusick '19
- Sarah Dendy '19
- Rebecca Frank '18, Melissa Layton '18, Zoe Case '18, Zack Eydenberg '18
- Olive Hilmes '18
- Camisha James '18 and Brittany Beckley '20
- Willa Lerner '18, Nicholas Navari '18, Mary Sawyer '18
- Elise Tran '19
- Lauren Wheeler '18

First-Year Seminars or Experiences

- Grace Halpern '21, Meam Hartshorn '21, Andrew Herbelin '21, Katherine Franco '21, Harry Clennon '21, Rara Gumbel '21, Stephen Kelly '21, Daniel Napsha '21, Jackson Fletcher '21, Sarah Greenspon '21, Katherine Reber '21, Phielie Dinsel '21, Ben Morgan '21, Sophia Alpizar Roman '21, Chris Sewell '21, Kate Regan-Loomis '21, Helen Cunningham '21, Nick Connelly '21, David Carstens '21, Elly Zhang '21, Elizabeth Stanley '21, Max Ohnesorge
- Michael Arman '18
- Armiya Shaikh '21, Eden Stephey '21, Michaela Brydon '21, Isaac Susser '21, Dorothy Wang '21
- Dante Kanter '21
- Molly Keen '21, Sigal Felber '21

Internships

- Lena Mazel '18
- Julian Morgan '18
- Erin Keleske '18, Dani Huffman '19, Lina Beron Echavarria '20, Amanda Coyle '18, Carson Weisbord '19, Cecily Graham '20, Kira Lancz '21, Sage Bornstein '20, Samuel Wolf '19, Sarah Stewart '20
- Meera White '18, Bryce Nicholls '18, Sarah Bauman '18, Emma Hood '19, Alex Hoffman '20
- William Freda '18 and Tally Trejo '18
- Dani Huffman '19
- Caroline Chang '18
- Sarah Modlin '18, Elizabeth Heckler '20, Lydia O'Donnell '20, Rachel Nguyen '19, Nate Grosh '19, Kirsti Buss '18, Paige Ballard '18, Elvin Shrestha '19

- Madi Maldonado '18, David Anderson '19, Juvi Rivera '19, Emma Esposito '20, Izzy Kotlowitz '20
- Colton Orr '18

Learning Communities

- Graeme Taylor '18
- Hannah Vilas '18, Emma Sniegowski '18, Coco Yuan '20

Senior Exercises, Honors Projects or Capstone Courses

- Megan Carr '18
- Joseph Chimes '19 and Rebecca Simantov '19
- Kate Petroff '18
- Colleen Moore '18
- Alexander Powell '18
- Hannah Russ '18
- Max Smith '18

Service Learning, Community-Based Learning or Research

- Leah Dunbar '20
- Maya Luckett '18, Hannah Russ '18, Severine Kaufman '18, Luca Agunos '18, Margaret Ellis '20, Ryder Sammons '19
- Srila Chadalavada '20 and Deveren Manley '19
- Sam Troper '18, Ethan Bradley '20, Viola Herzig '20, Ariela Papp '20, Kaitlyn Griffith '21
- Eduardo Vargas '18, Eric Thornton '18, Nate Novak '18, Samuel Canseco '21, Scout Crowell '20
- Maria Brescia-Weiler '19, Mary Grace Detmer '19, Helena Winterbottom '20
- Adam Aluzri '19
- Jadah Jones '18, Max Smith '18, Eva Warren '19
- Nick Culbert '20, Louise Foster '18, Mila Frank '20, Grace Harris '20, Salomon Hernandez '20, Zach Hollander '21, Jessica Khrakovsky '18, Sydney Mladineo '20, Chris Sheets '20

- Kelsey Trulik '18, Toneisha Stubbs '18, Megan Gothard '19
- Sage Bornstein '20, Samuel Wolf '19, Caitlin Kennedy '19, Carly McDonald '20, Sammy Russell '20, Paige Haden '20, Georgia Stolle-McAllister '20, Jennie VanMeter '20, Jackie O'Malley '21, Hannah Petrich '21, Ben Berejka '20, Emily Criss '21, William Morton '21
- Ghada Bakbouk '19, Nick Downey '20, Miku Fukuyama '18, Bennett Grigull '18, Elizabeth Iduma '20, Malik Ahmed Khan '19, Harold Ogilvie-Thompson '19, Emily Rachfal '20, Joey Schutz '18, Elvin Shrestha '19, Christian Solorio '18, Thomas Stanton '19, Spalding Vance '19
- Marie-Sophie Dinsel '21, Claire Fraise '21
- Alexander J Reid '19, Ashley Marie Martens '18, Amanda Simpkins '18, Srila Chadalavada '20, Paige Matijasich '20

Undergraduate Research

- Quinn Adam '20
- Rosa Rumora '19
- J. Sebastián Chávez Erazo '18
- Joshua Walmer '18
- Kevin Towle '19
- Clara Pinchbeck '18, Conner McEldowney '19
- Nick Leibowitz '18
- Kristen Edgeworth '20
- Maggie Murphree '19
- Sarah Jensen '18
- Ben Reingold '20, Catherine Horwitz '20, Jordon Horowitz '20, Sam Humphrey '20
- Anu Muppirla '19
- Henry Brill '19
- Claire Oxford '18
- Ryan Muzzio '18
- Emma Klug '18, Sophia Letcher '18
- Kristen Pitts '19

This event is sponsored by the Office of the President with the assistance of the Office of the Provost, the Office of Communications, and the Department of Athletics. The following sponsors have generously donated refreshments and prizes: AVI, Beauty Studio B, Buffalo Wild Wings, Chipotle, Dairy Queen, Domino's Pizza, Family Video, Kenyon College Bookstore, Kenyon Inn, Marco's Pizza, Panera Bread, Premiere Theatre, Tim Hortons, Utz Quality Foods Of Hanover, Pennsylvania, Village Market, Village Inn, The Weather Vane and Wendy's.

Abstracts

Collaborative Assignments or Team Projects

Course-Based Undergraduate Research in Organic Labs at Kenyon

WYATT COLE '19

In the fall of 2017, Organic Lab II (Chem 234) students actively investigated three current research questions from the Getzler and Hofferberth laboratories. These projects focused on analysis and purification of a complex chemical mixture, selective oxidation of symmetric diols and construction of complex synthons. One indicator of this model's success is project translation from a teaching lab back to a research setting. Presented here is an investigation of the selective oxidation of symmetric diols using NaBrO₃ and NaHSO₃ that followed just this path. During the course, critical flaws were identified in the published procedure that severely decreased yield. Such course-based undergraduate research experiences (CUREs) as this class produce higher-level learning outcomes: increased identity formation as scientists, improved attainment of technical and analytical skills and increased persistence in science. The interest and expertise built during this class has continued beyond it. The Getzler laboratory is confident this work will produce an improved synthesis of a research-critical class of molecules.

Faculty Mentors: Yutan Getzler and John Hofferberth

Structure and Function of Biological Macromolecules: Production of On-line Tutorials Using JMOL Scripting

JEREMY MOORE '19, MACKENZIE BRUZZIO '20, NATALIE TWITCHELL '19, KARINA KUNKA '19, WEICHEN ZHAO '20, JORDAN LEVIN '19, SARAH MANZ '19, PETER REINHART '20, TY BOYD '20

For more than two decades, students in BIOL 263: Molecular Biology have formed teams to produce interactive web tutorials that dynamically describe the structure and function of a protein relevant to the course's theme. These have included transcription factors, receptors, enzymes and membrane transport proteins. In recent years, these tutorials have used the JMOL scripting language to highlight detailed features of these molecules derived from information in the RSCB Protein Database. Students from the Molecular Biology course will display the results of the fall 2017 capstone projects.

Faculty Mentor: Wade Powell

Monitoring Atmospheric Ammonia Concentration at Kenyon

SAM GRUNDER '19, COLLYN CARPENTER '21, NAT HENRY '20, AUTUMN GOMEZ-TAGLE '21, SCHUYLER BUNN '21, BRANDON BYRD '18

Kenyon College is hosting an ammonia (NH₃) monitoring station as part of the National Atmospheric Deposition Program (NADP). Kenyon's site (OH32) is one of six locations in Ohio. The fall 2017 environmental chemistry class managed this station — changing the sampler according to protocol, mailing the sampler to the analysis lab and preserving the measured ammonia concentration data. The data obtained allowed research on the role of weather conditions on ammonia concentration and the effect of station location on average ammonia concentration. The class learned the following quantitative reasoning skills during the project: data management, data visualization with graphs and mapping with geographical information systems. Students observed that temperature, humidity and wind speed have an effect on ammonia concentration levels at the Kenyon site. Students also noted that Ohio site locations with higher population had higher average NH₃ concentration.

Faculty Mentor: Vivian Chibuzo Ezeh

Projects in Electronics

AUSTIN HULSE '19, RACHEL NGUYEN '19, KYLE ROSE '19, BRYCE WEDIG '18

In Electronics Lab, an advanced physics elective, students learn digital electronics and how to program with Arduino microprocessors that can interact with the world in a variety of ways. The capstone project of the course is a gadget designed and built by the student. Four of the many interesting projects will be on display: a guitar tuner, a sunrise alarm clock, a device to help the elderly and a sound visualizer!

Faculty Mentors: Tim Sullivan and Frank Peiris

Sports Analytics and the 2018 Diamond Dollars Case Competition

JOHN MARINO '19, GRANT CARR '19, NOAH NASH '19, JUSTIN CLARK '19, JAKE FISHER '20

Kenyon's Sports Analytics Club facilitates peer and faculty review of statistical models and methods in sports. This year Kenyon students participated in the Society of American Baseball Research's Diamond Dollar Case Competition in Phoenix. Kenyon students presented their case analysis to a judging panel of Major League Baseball team executives. Students will share their experiences from the competition, and collaborative assignments from Kenyon courses will also be discussed. For example, Grant Carr and John Marino will discuss their use of play-by-play data from the 2017 MLB regular season and Markov Chains to estimate the change in the chance of winning a game after the biggest plays of the 2017 World Series between the Houston Astros and the Los Angeles Dodgers.

Faculty Mentors: Marie Snipes and Brad Hartlaub

The Effects of Context on Folk Perceptions of Art

NOELLE O'NEAL '21

Do lay people intuitively believe that context affects one's aesthetic appreciation of art? To test this, a survey was designed and sent to the students and faculty of a small liberal arts campus. The survey contained two vignettes. Both vignettes described a person seeing and reacting to a piece of art, but only one of them described the same person reading contextual information about that artwork. Subjects then answered questions designed to gauge how much they thought the person in the vignette appreciated the art in each scenario. The results from this survey show that contextual information had no effect on the participants. Thus, the conclusion: people intuitively believe that context neither helps or hinders one's appreciation of art.

Faculty Mentor: Alexandra Bradner

Gund Gallery Associate Digital Outreach Team Presentation

AMY SHIRER '18 AND HENRY UHRIK '18

Gund Gallery Associates have produced video interviews every year since the gallery opened in 2011. Given creative freedom to tell the stories they want to explore, the current video team will present a series of artist interviews produced over the course of the academic year. Associates have also been working to foster an active social media presence for the Gund Gallery. The digital outreach team's presentation will highlight the efforts and strategies that produced social media buzz for the museum of contemporary American art.

Mentor: Chris Yates

Gund Gallery Associate Collections Team Presentation

SHAYNE WAGNER '18, SARAH HOFFMANN '20, CAROLINE CHANG '18

Orchestrating an art loan program is no easy task. Involved in every step of the process, Gund Gallery Associates install artwork and serve as ambassadors for the program. They solicit feedback, answer questions, and teach students how to care for the pieces on loan. Because the art is student-installed in student spaces, a rapport quickly develops and allows barriers to drop and discussion to flow. Student participants will explain and present documentation of the art loan program. Other Associates who work on collection conservation helped move Ransom Hall paintings and are preparing War rugs for exhibition. Those Associates will present images of their conservation and collection maintenance efforts.

Mentor: Chris Yates

Gund Gallery Associate Education and Visitor Experience Team Presentation

JONAH EDWARDS '18, ALMA URBANO-TORRES '18, LUISA ESTRADA '19, AND LUIS PLATAS '20

Two community-building art exhibitions were produced this academic year. Student participants will present documentation and visual materials relating to a student juried and organized exhibition of Kenyon College, Mount Vernon Nazarene, and Central Ohio Technical College student art work. This pop-up exhibition was presented during the Christmas Parade in downtown Mt. Vernon and at the Wright Center November 26-December 11, 2017. To complement the exhibition "Urban Cadence: Street Scenes from Lagos and Johannesburg," Gund Associates are now working on a juried digital photo exhibition open to all residents of Knox County that will capture the essential rhythms of life in Knox and celebrate the unique perspectives of Kenyon's friends and neighbors. Students will also present the educational activities they've planned and executed for the museum's family day and story time events. Students will discuss what art education they presented in sessions with Mt Vernon 6th graders, guests of the SPI science space and Knox Community Hospital staff.

Mentor: Chris Yates

Gund Associate Curatorial Team Presentation

JESS ALPERIN '18, PHOEBE POHL '18, ROBERTO VASQUEZ '19, CATHERINE VON HOLT '19, JAMIE SUSSMAN '21, CAMERON PETERS '20, AND QUINN ADAM '20

Three student-curated shows opened at the Gund Gallery March 19, 2018. Students selected artwork, researched artists, wrote labels and designed layouts for each show. Other students wrote, designed, and produced catalogs for each exhibition. "Stories of Self-Reflection: Portraiture by Women Photographers" highlights gifts to the Gund Gallery Collection of photographic portraiture by Claire Beckett '00, Helen Levitt, Vivian Maier and Rania Matar. Often portraying the trajectory of childhood and adolescence, these images capture the liminal stages of life and expose moments of self-creation by the artists and their subjects. "An Interior View: Contemporary Cuban Photography by Arien Chang Castán and Leysis Quesada Vera" shows the work of two contemporary Cuban photographers who allegorically recreate the unique rhythms of everyday life on the street and in the countryside. They compose a rich vernacular image of life in Cuba suspended in an ambiguous historical moment between the dreams of the country's revolutionary history and an uncertain future of socio-economic change. "Smash the control images: Idiosyncratic Visions in Late Century American Art" looks at a period of drastic social change in America, when artists began materializing their own idiosyncratic visions against the background of the Vietnam and Cold Wars, racial inequality, drug culture and the protest movements. This exhibition includes Gund Gallery collection works by Claes Oldenburg, Corita Kent, Roy Dean DeForest, William T. Wiley, Don Nice, David James Gilhooly and others who share an anti-establishment agenda.

Mentor: Chris Yates

Common Intellectual Experiences

Studying Abroad as a STEM/pre-health Student

HANNAH WEDIG '19

This presentation will discuss studying abroad as a STEM major, particularly those on the pre-health track. A common misconception holds that students must choose between pre-health coursework and studying abroad. This presentation covers how to prepare to study abroad as a STEM/pre-health student and the huge benefits of studying abroad as a pre-health student — not only in academics but also in becoming a more confident, curious, passionate and well-rounded individual that makes a graduate even more desirable to universities. While abroad, Hannah Wedig joined a conservation volunteer group that brought her closer to the flora and fauna of New Zealand and took courses on developmental/applied genetics and animal physiology, all of which augmented her pre-vet experience. Printed handouts and relevant photos and videos from her time abroad will be on display.

Mentor: Meghan Mason

Diversity or Global Learning

The Potential For (and the Limits of) Queering Organized Sport in Europe

DEVON CHODZIN '19

Devon Chodzin's Women & Gender Studies research project on her semester abroad sought to understand how LGBTQ athletes in the Netherlands, Germany, Czech Republic and Poland evaluated their experiences in physical education and how they seek change in sports as adults. The study included interviews with board members of LGBTQ+ focused athletic clubs and interviews with individuals who identify as LGBTQ+ but do not participate in these clubs in order to map how different relationships to sport emerge in different national, political, temporal and experiential contexts. The project considers the potential for "queering" sport within these contexts and identifies ways people have used "queer" methods to reduce heteronormativity and exclusivity in athletic contexts.

The report also considers how LGBTQ subjects perpetuate existing norms in sport, and it contextualizes responses in their national and regional political contexts so as to open the door for comparative studies in physical culture and education. The conclusion: it is vital to draw out possibilities for queering sport because of the potential to constitute a more inclusive and ethical institution where hierarchies of gender, race, sexuality and ability are suspended.

Faculty Mentor: H. Abbie Erler

The Sociolinguistic Implications of Mandarin Loanwords on the Naxi Language

ALICE CUSICK '19

For hundreds of years, Lijiang's Naxi people have lived among other ethnic groups, specifically the Han, Zang and Bai. These groups maintained separate languages but often adopted words from each other. Due to language policy change, increasing tourism and compulsory education, Han culture has become dominant in Lijiang. This has increased language contact between Chinese and Naxi and impacted the structure of the Naxi language as well as Naxi culture. Although some scholars believe Han words have greatly improved the Naxi lexicon, much Naxi vocabulary is being replaced by Chinese words while the original words are forgotten. This project examines the ways in which the Naxi language reflects a changing Naxi culture.

Faculty Mentor: Jianhua Bai

Biodiversity Profile for a Tropical Island Archipelago

SARAH DENDY '19

Biodiversity analyses are crucial to an understanding of the health and stability of ecosystems and the efficacy of conservations programs like parks and preserves. In tropical regions, the biodiversity of pollinators represents a unique sample of vertebrates and invertebrates as well as flowering plant taxa ideal for analytical purposes. The Isla Bastimentos Marine Protected Area in Bocas del Toro, Panama, contains a series of poorly surveyed terrestrial habitats which could benefit from rapid biodiversity assessment. Sarah Dendy conducted abundance assessments of flowers and timed stationary observations of the abundance and species of visiting pollinators at several sites in the MPA. The resulting list of plants and pollinators is more complete than previously available lists and allows for diversity comparisons between plants and sites. Animals visiting flowers included seven orders and at least nine families, with Formicidae (Hymenoptera) the most abundant. The flower with the most diverse observed pollinators was *Psychotria poeppigiana* (Rubiaceae), and the site and habitat with the greatest plant and pollinator diversity was forest habitat on Isla Bastimentos.

Mentor: Meghan Mason

Experiencing British Literature and Landscapes Through the Kenyon-Exeter Program

REBECCA FRANK '18, MELISSA LAYTON '18, ZOE CASE '18, ZACK EYDENBERG '18

Participating in the Kenyon-Exeter study abroad program allows students to read "Macbeth" and then see it performed at the Globe theater, where Shakespeare's original plays were performed. Students also read Jane Austen's *Persuasion* and John Fowles's "The French Lieutenant's Woman," two novels that take place in Lyme Regis, a town in Devon, the very region in which students live during the program. Students visited the famous Cobb boardwalk there because it features prominently in both novels. Simply living and attending classes with British students allows Kenyon students a deep exploration of the two nations' similarities and differences in schooling systems, holidays and politics.

Faculty Mentor: Wendy Singer

Off-Campus Study with The Philadelphia Center

OLIVE HILMES '18

Olive Hilmes explored a domestic alternative to study abroad for those with marginalized identities as well as financial constraints, one that would still challenge a student's notions of the outside world while bolstering their employment opportunities. In the spring of 2017, Hilmes took a 6-month internship in Philadelphia with a local labor union and completed 2.0 academic credits all within the framework of The Philadelphia Center (TPC). The internship with UNITE HERE Local 274 allowed Hilmes to turn a passion for social justice into a set of tools applicable for future employment. In addition, professors at TPC provided engaging course material that deconstructed structures of power, authority and gender in the workplace. Hilmes lived in West Philadelphia, taking opportunities to explore the city, engage in social justice movements and find a community of friends who supported Hilmes as a queer and genderqueer person. Hilmes has prepared a slideshow, TPC handout materials and videos to illustrate the impact of this program for Hilmes as well as its potential for other Kenyon students.

Mentor: Meghan Mason

REACH Mentoring Program: "Stay Gold"

CAMISHA JAMES '18 AND BRITTANY BECKLEY '20

The theme for the REACH presentation is "Stay Gold." The phrase appears in the novel "The Outsiders" when one character encourages another to seek golden qualities and individuality. This presentation showcases the ways REACH allows students to "Stay Gold" by highlighting the various activities and services that REACH provides for students and how these services personally impact the lives of each student.

Mentor: Jacky Neri Arias

Policy Approaches to Addressing Health Disparities in America

WILLA LERNER '18, NICHOLAS NAVARI '18, MARY SAWYER '18

Low income Americans experience poor health outcomes and poor health status compared to their wealthy counterparts, and these disparities continue despite the Affordable Care Act extending health insurance to millions of Americans. Other policy approaches are needed. During the 2017 fall semester, students in the class Introduction to Global Public Health created 4-minute audio TED-style talks on social, environmental and medical policies that could reduce the gap in health status between low and high income Americans. This presentation will share the TED talks focused on parental leave, the implicit bias among medical providers and a new design for the built environment for health. All presentations will include a summary of a research article on the topic, followed by a reflection on the significance of reducing disparities and a final call to action.

Faculty Mentor: Amy Ferketich

"Romancing the Savage": Whang-Od and Changing Perceptions of Igorots

ELISE TRAN '19

The Philippines became a territory of the United States following the Spanish-American War in 1898. During the next 50 years of American occupation, foreign interference created ethnic hierarchies across the islands, and mainstream Filipinos came to regard the Igorots and other indigenous groups as uncivilized and barbaric. Their traditional Igorot tattoos, once associated with status and achievement, became a source of shame; indeed, Filipinos demonized "the Igorot" as a tail-bearing savage. Yet in recent years, mainstream Filipinos have expressed a surge of interest in Igorot culture, as evident by the popularity of Kalinga elder Whang-Od, who is hailed as the last traditional mambabatok (tattoo practitioner), and Jeyrick "Carrot Man" Sigmaton, whose viral photographs have put him in the national spotlight as a fashion model. Through on-site interviews with these tattoo pilgrims and Carrot Man fans and social media analyses, this project examines to what degree the perceptions of Igorots held by mainstream Filipinos have changed as a result of the sudden popularity of Whang-Od and Carrot Man and the increased interaction between Igorots and mainstream Filipinos as facilitated by tourism.

Faculty Mentor: Sam Pack

Millennial Moroccan Women Desire Equitable Marriages

LAUREN WHEELER '18

This research offers poignant insights into the social and legal structures that influence dating, engagement, marriage and divorce in Morocco by synthesizing academic literature with Lauren Wheeler's independent research. Seventeen millennial Moroccan women were interviewed for their opinions on romantic relationships, marriage, divorce and law. They were then asked to situate their opinions in agreement with or in contrast to the opinions of their friends and parents. There was remarkable uniformity in the way the 17 women identified their opinions on dating, engagement and marriage to be quite different from the opinions of their parents. This generational difference between the perspectives of young women and their parents is indicative of a larger, continuously evolving, socio-political culture that is bringing women's societal positionality to the forefront of modern Moroccan discourse. The insightful responses reveal frustrations with patriarchal standards in legal code and social double standards surrounding the sexual and marital expectations of men and women.

Faculty Mentor: Nurten Kilic-Schubel

First-Year Seminars or Experiences

Quest for Justice Argument Clinic

GRACE HALPERN '21, MEAM HARTSHORN '21, ANDREW HERBELIN '21, KATHERINE FRANCO '21, HARRY CLENNON '21, RARA GUMBEL '21, STEPHEN KELLY '21, DANIEL NAPSHA '21, JACKSON FLETCHER '21, SARAH GREENSPON '21, KATHERINE REBER '21, PHIELIE DINSEL '21, BEN MORGAN '21, SOPHIA ALPIZAR ROMAN '21, CHRIS SEWELL '21, KATE REGAN-LOOMIS '21, HELEN CUNNINGHAM '21, NICK CONNELLY '21, DAVID CARSTENS '21, ELLY ZHANG '21, ELIZABETH STANLEY '21, MAX OHNESORGE

What makes the course Quest for Justice a high impact practice are the lively debates that begin in the classroom, continue at lunch and dinner and often extend late into the night with friends from inside and outside the course. Quest does not aim to supply students with answers to life's great questions but to help them begin thinking about the questions more rigorously and profoundly. Quest students will share this experience with the rest of Kenyon at the "Argument Clinic" booth. Pick a topic and start a debate with some Quest students. See why Quest serves as an introduction not only to political science but to liberal education generally — education that frees the mind by focusing it on the handful of questions that matter most.

Faculty Mentors: David and Lisa Leibowitz

Can a Bettor Predict the Over-Under Line Based off of the Wind?

MICHAEL ARMAN '18

This project sought a market inefficiency in the gambling market on the over-under line at Wrigley Field. Using data from 162 home games in the 2016-17 seasons for the Chicago Cubs, Michael Arman ran a series of regressions to see if there is statistical evidence to the hypothesis that wind speed and direction affect the total runs per game and can be used to predict the over-under line for a specific game. There was suitable evidence the over-under line does not value the wind speed as accurately as it could. Thus, there is some evidence there could be a profitable strategy when the wind is at a speed of 10 mph or greater, betting the over when the wind blows out and betting the under when the wind is blowing right to left field.

Faculty Mentor: PJ Glandon

Maths: Beyond the Basics

ARMIYA SHAIKH '21, EDEN STEPHEY '21, MICHAELA BRYDON '21, ISAAC SUSSEY '21, DOROTHY WANG '21

Students of the first year seminar in mathematics will demonstrate several ideas to instill within the Kenyon community the same curiosity for math that the seminar develops. The booth will feature an explanation of the famous, yet still unsolved, Riemann hypothesis and its relevance to the math community. There will be an explanation of the zeta function and how it relates to the Riemann Hypothesis, as well as a list of the six other Clay Mathematics Institute Millennium Problems. Students will also display content from a variety of fields within mathematics, like combinatorial topology and number theory. To exemplify some of these concepts, students will provide hands on activities

and demonstrations. The booth will ask “Did you know a coffee mug and a doughnut are topologically the same? Ask us why!” Hands-on activities will let guests “Make Your Own Mobius Strip” and use dry erase spheres to explain topological properties.

Faculty Mentor: Judy Holdener

Exploring Community- Benevolent Protective Order of the Elks

DANTE KANTER '21

As a project for the course Life Along the Kokosing, Dante Kanter and Harper Beeland interviewed Hilbert Myers, one of the last remaining members of the Improved Benevolent Protective Order of the Elks of the World (IBPOEW), a local, racially inclusive fraternity that disbanded in the early 2000s. The Black Elks Kokosing lodge, at the end of West Gambier street, began operating 10 years before the founding of the national organization. During its operation, the local lodge and its sister organization, the Daughters of the Elks, served as a fulcrum of the black community in Mount Vernon. The lodge had a bar open for non-members, and the profits paid for community events, maintaining the organization and helping members who were struggling financially. The organization served as a social space for those who were marginalized from many of the social organizations in Mount Vernon at the time.

Faculty Mentor: Bruce Hardy

Mount Vernon Public Schools Research Project

MOLLY KEEN '21, SIGAL FELBER '21

Unlike most Midwestern, rural, public schools, the Mount Vernon City Schools are influenced by the presences of three unique collegiate institutions. Kenyon College, Central Ohio Technical College and Mount Vernon Nazarene University provide academic presence, athletic facilities and community outreach to MVCS students. Mount Vernon students have rare opportunities (compared to most high schools) from the proximity and diversity of the three colleges. Though Mount Vernon is the urban hub of the county, its spirit and culture is entrenched in rural tradition; the singular high school is a symbol of the community. A bulk of families have been in the area for long enough that their children have little encouragement from home to leave the county to attend college. Thus, exposing students to college level classes and other hallmarks of university life would encompass long term goals for MVCS. Between the three colleges in the Mount Vernon community, two different yet equally successful programs (KAP and CCP) have emerged to help students become successful in college-level academics.

Faculty Mentor: Bruce Hardy

Internships

Literacy Intervention in Nashville

LENA MAZEL '18

Two public schools in Nashville, Stratford STEM Magnet High School and Maplewood High School, have programs within the school day to help students who fall behind in reading, writing and math skills. These programs are operated by the nonprofit Martha O'Bryan Center. Last summer, Lena Mazel interned with the Martha O'Bryan program to build a creative writing program at Stratford. She met with educators and program directors around the city and strategized with Martha O'Bryan Center coordinators to assess the needs of Stratford students. Mazel also met with Stratford alumni, mentored current students through Martha O'Bryan's Post Secondary Success program and trained Americorps workers to help students through the creative writing exercises. The product of her summer work is a creative writing program at Stratford which targets multiple skill levels, is available online, is well documented and repeatable and offers writing assignments based on cultural- and age-relevant questions.

Faculty Mentor: Peter Rutkoff

Branch Rickey Program

JULIAN MORGAN '18

Julian Morgan has participated in the Branch Rickey Mentorship program, a professional shadowing experience that matches veteran NCAC athletic administrators and coaches with female and minority students who aspire to a career in college athletics. Morgan has had one-on-one conversations with various head coaches and administrators in the athletic department about athletic management and budgeting. Morgan was also one of 40 students in Branch Rickey's student immersion program at the 2018 NCAA convention in Indianapolis, where head athletic administrators discussed NCAA legislation and other individual conference policies. The Branch Rickey program grants the opportunity for experiential learning that form the first steps into a career in collegiate athletics.

Mentor: Kelly Bryan

Internships in the Office of Green Initiatives

ERIN KELESKE '18, DANI HUFFMAN '19, LINA BERON ECHAVARRIA '20, AMANDA COYLE '18, CARSON WEISBORD '19, CECILY GRAHAM '20, KIRA LANZC '21, SAGE BORNSTEIN '20, SAMUEL WOLF '19, SARAH STEWART '20

Interns provide essential support to the Office of Green Initiatives (OGI). They are engaged with almost every facet of progress and are solely responsible for a number of the office's successes. Kenyon's commitment to sustainability has always been linked to and driven by student work. Beginning with the “Own Your Footprint, Own Your Future” campaign, OGI interns have diligently pushed Kenyon toward our institutional goal of carbon neutrality. From peer engagement and programming to data collection to composting and recycling, the OGI interns demonstrate how hands-on experiential learning can create real, meaningful results.

Faculty Mentor: David Heithaus '99

Working on Purpose: the Academic and Professional Value of Internships

MEERA WHITE '18, BRYCE NICHOLLS '18, SARAH BAUMAN '18, EMMA HOOD '19, ALEX HOFFMAN '20

What does learning look like off the Hill? What are the mindsets and competencies fostered by a Kenyon education that are essential for engaging in meaningful work? Associate Director for Career Development Anneke Mason '10 will moderate a discussion with student panelists across academic disciplines about their work-engaged learning experiences from the summer of 2017. Panelists will discuss how work-engaged learning informed their academic and career trajectories and give advice for students considering internship opportunities. Panelists include Meera White '18, the Robert Frederick Smith Publication Support and Digital Imaging Intern at The Smithsonian National Museum of African American History and Culture (faculty mentor Patrick Bottiger); Bryce Nicholls '18, special summer research fellow, National Institute of Health; Sarah Bauman '18, summer operations analyst, J.P. Morgan Chase & Co.; Emma Hood '19, private capital investors summer intern, New York Life Investors, (faculty mentor Judy Holdener); and Alex Hoffman '20, wilderness ranger intern, Student Conservation Association.

Mentors: Anneke Mason and Holly McCormack

Two Italian MLL Majors Abroad and One Translation Internship

WILLIAM FREDA '18 AND TALLY TREJO '18

In the spring of 2017, William Freda and Tally Trejo interned at the State Archives of Siena. They collaborated to translate a 90-page booklet detailing the history and architecture of the State Archives building and the institute's collection of painted, wooden book covers. This presentation will discuss the obstacles they faced while translating Italian into English, the resources used to overcome these obstacles and the experience of working in an academic environment while abroad. As MLL majors, Freda and Trejo have since used their experience in class discussions and work. The internship improved their knowledge of Italian, which helped them become apprentice teachers in Italian.

Faculty Mentor: Patricia Richards

Stormwater Biofilters at UCLA

DANI HUFFMAN '19

Over the summer of 2017, Dani Huffman worked as a research intern in an ecology lab in the Department of Environmental Health Sciences at UC Los Angeles. Dr. Rich Ambrose's lab was working on a stormwater biofilter project along with researchers at five other UC campuses. Stormwater biofilters collect rain runoff and filter the water through native plants and soil in order to purify the water before it goes either into sewers or into the ground. Huffman spent the summer working in the lab and in the field, surveying biofilters across the UCLA and UC Santa Barbara campuses to decide which would be chosen for further research and implementation.

Faculty Mentor: Rob Alexander

Museum Internships

CAROLINE CHANG '18

Last summer, Caroline Chang interned at the Frick Art Reference Library and the Metropolitan Museum of Art. During her time at the Met, she interned in the arms and armor department and gained experience in collections management. At the Frick, she spent her time tracing the provenance of paintings in the Lenox Library. This experience allowed her to better understand the intricacies in researching print, archival and digital materials. These internships solidified her decision to pursue a museum-related career after graduation. This presentation will describe Chang's internship tasks and experiences and how she was able to apply her art history coursework to these internships.

Faculty Mentor: Melissa Dabakis

LBIS Reference Intern Program

SARAH MODLIN '18, ELIZABETH HECKLER '20, LYDIA O'DONNELL '20, RACHEL NGUYEN '19, NATE GROSH '19, KIRSTI BUSS '18, PAIGE BALLARD '18, ELVIN SHRESTHA '19

The Research and Reference Intern program is a unique experience that allows students to learn academically rigorous research skills, practice communication and customer service skills and help students, Kenyon employees and community members utilize the library's multitude of resources. A sound knowledge of library resources allows students to choose niche research topics, find rarer materials and pursue more diverse research questions.

Mentor: Aimee Jenkins

Commencement Student Managers

MADI MALDONADO '18, DAVID ANDERSON '19, JUVI RIVERA '19, EMMA ESPOSITO '20, IZZY KOTLOWITZ '20

Over the past 12 years, the Commencement Office's program for student managers has grown to include: assisting in the hiring process for student workers; keeping the student manager manual up-to-date; setting the work schedule for Senior Week and Commencement Weekend; managing significant aspects of graduation weekend; recommending and training managers-elect; building and maintaining relationships with the faculty, administrators, staff, safety officers, maintenance managers and AVI staff who collaborate on Commencement; communicating effectively with vendors and service providers; maintaining event storage and stock; working on advertising/communication for the Grad Fair; running front- and back-of-house areas during ceremonies throughout the year; serving as point of contact for all student workers; and serving as on-site managers in situations where students interact with the public or faculty/staff. Past student managers have reported that the work they did on Kenyon events gave them a skill set and a sense of confidence that served them well in their first jobs after college.

Mentor: Pamela Faust

Across the World for Grapes

COLTON ORR '18

While studying abroad in Scotland, Colton Orr worked for wine shop owner Peter Wood and learned about the industry. After returning to the U.S., Orr and Wood stayed in close contact, and Orr assisted him with new ad campaigns and marketing efforts. As the summer of 2017 approached, Orr was granted stipend money to meet Elise Borghini, a single vineyard owner working on her family's land in Mone Sasso, Italy. During his time studying Borghini's operation, Orr walked the rows of grapes, visited local producers and discussed business strategy with Borghini. He then applied this research to his internship with the Saint Andrews Wine Company.

Mentor: Leslie Harding

Learning Communities

Reassessing the Classical Narrative of Science

GRAEME TAYLOR '18

This presentation will demonstrate some of the Muslim advancements in mathematics examined by George Saliba in his "Alternative Narrative" of science history. The "Classical Narrative" imparts that decimal notation came from Steffin, that the Greeks and Europeans were responsible for all innovations and that ancient Islamic civilizations only served to maintain the Greco-Roman science that preceded them. A belief persists in the West today that the Islamic faith was and is diametrically opposed to scientific inquiry and that Islam as an institution stifled innovation and persecuted scientists. This and the preceding assertions of the "Classical Narrative" are false. Islam was a guiding force for many Muslim scientists, including Ibn al-Haytham, who saw it as his religious duty to seek knowledge. Theocrats and religious leaders alike saw research in the sciences as essential to the advancement of civilization and to a life in service of God. There was significant public patronage for scientific ventures as early as the time of the Abbasid Caliph al-Mansūr (754-775 [A.D.]). Many mathematical innovations were predicated on the need for accurate calculations of distance, direction and time to better adhere to rules set forth in the Quran.

Faculty Mentor: Nuh Aydin

Fostering Second Language Fluency: Reciprocal Benefits of the Peer Instructor Model

HANNAH VILAS '18, EMMA SNIEGOWSKI '18, COCO YUAN '20

Vygotsky's model of scaffolded learning suggests that second language development is supported through work with "a more capable peer." This peer models, encourages and facilitates learning through dynamic interactions. What, however, are the learning benefits for the more capable peer? Beyond the extra hours of language practice and conversation, teaching a language additionally requires using a particular genre and register. There are more than 40 peer instructors working with small groups of students under the mentorship of MLL faculty at Kenyon College. MLL's Apprentice Teacher (AT)

program allows advanced second language students to apply and extend their language skills through teaching, imparting benefits to both the learner and peer instructor. This presentation with live demonstrations will showcase classroom techniques honed by advanced ATs, focusing not only on how they teach but on how teaching expands their own second language capacities.

Faculty Mentor: Mary Kathryn Malone

Senior Exercises, Honors Projects or Capstone Courses

From the River to the Seams: Embroidery, Women's Committees and National Identity During the First Intifada

MEGAN CARR '18

Megan Carr's senior thesis researched the role of Palestinian embroidery as a means of political protest during the First Intifada, 1987-1993. Palestinian embroidery has become symbolic of the Palestinian nation and has come to represent a history of dispossession and the movement for statehood. During the First Intifada, women began embroidering dresses with nationalistic symbols, such as the Palestinian flag, al-Aqsa mosque in Jerusalem and even nationalistic slogans. These flag dresses represented both a continuation of an ancient artform that is celebrated in Palestinian culture and a departure from its traditional design and meaning. Not only were they worn in the streets as a form of protest against the occupation but women's committees organized their production en masse during the Intifada, creating a cottage industry that remains important to Palestinian society today. The research included modern preservation efforts of the dresses in Palestinian museums. The thesis concludes that during the Intifada embroidery functioned as a means through which Palestinian women contributed greatly to their nation's material culture, creating something that would come to signify not only Palestinian women's self-determination but also the Palestinian national movement.

Faculty Mentor: Nurten Kilic-Schubel

Living Music: A New Compositional Technique

JOSEPH CHIMES '19 AND REBECCA SIMANTOV '19

This project is an independent study in which Joseph Chimes and Rebecca Simantov developed a new system for music composition based on John Conway's cellular automaton the Game of Life. Their experimentation with an extramusical source for a compositional system lends new life to Conway's innovations by expressing them musically. By integrating Conway's concept of cellular automata with a version of the serialist techniques used by early 20th-century composers such as Schoenberg, Webern and Berg, Chimes and Simantov were able to generate a new method of composing music. This demonstrates how concepts from a wide range of disciplines (in this case,

music and mathematics) can be integrated to create new and stylistically unique work. Working with Professor Ross Feller, they composed two piano pieces that will be performed alongside a presentation explaining the process.

Faculty Mentor: Ross Feller

Philosophy, Literature and Moral Understanding

KATE PETROFF '18

Many would acknowledge that works of literature have something to teach us about the world. In this project, Petroff explains how different philosophers have dealt with this idea and discusses how propositional-knowledge accounts show that readers find propositions they believe in literature, not propositions they know. There is a non-propositional moral understanding to be gained from reading works of literature.

Because literature can offer rich depictions of the inner lives of characters, it can aid readers in understanding the inner lives of others. Drawing from Iris Murdoch, Petroff claims that one's inner life plays a significant role in moral life — making the skill of understanding the inner lives of others a type of moral understanding. Ultimately, this project is a defense against claims that literature does not engage in a scientific exploration of the human mind.

Faculty Mentor: Joel Richeimer

The Veerappan Effect: Terror, Torture, and Human Rights in the Modern Narrative of Banditry in India

COLLEEN MOORE '18

In 2004, the infamous South Indian bandit Koose Muniswamy Veerappan was killed by a Special Police Task Force made of officers from the states of Tamil Nadu and Karnataka. The bandit himself remains a mysterious figure, but his actions set off a large chain-reaction in Tamil culture and politics. The hunt for Veerappan lasted more than a decade and resulted in the mass incarceration and torture of hundreds of local villagers who experienced extra-judicial arrest, torture, rape and execution at the hands of the Special Police Task Force. Colleen Moore's project looks at three crucial elements of "the Veerappan Effect." First, the project explores the genealogy of criminal law and banditry under the British Government of India and how it evolved in independent India.

Secondly, there is an examination of how anti-terror and anti-insurgency legislation in the 1970s and 1980s led to the rise of human rights organizations in India. Finally, the paper examines the legacy of Veerappan as a cultural bandit in Tamil Nadu through his afterlife in print media, film, books and folklore.

Faculty Mentor: Peter Samuels

Sports and Statistics: My culminating projects on the Hill

ALEXANDER POWELL '18

The use of statistical methods and data science continues to expand in the sports industry. Alexander Powell has combined his passion for statistics and sports into a series of

capstone projects that were initiated during his internship with the Charlotte Hornets of the National Basketball Association. Powell will present the results of his modeling and simulations to project winners of European soccer leagues, to compare Olympic swimmers with an ELO ranking system, to evaluate NBA performance and to help the Hornets make picks in the NBA draft. In addition, Powell will talk about the activities of the Sports Analytics Club on the Hill he founded with Jack Marino. This new club will enable students to share their statistical analysis in short articles for a variety of sports projects.

Faculty Mentor: Brad Hartlaub

Senior Exercise: Staging Nijinsky's L'Après-Midi d'un Faune from Score

HANNAH RUSS '18

In the fall of 2017, four students took on individual projects that, when combined, complete the re-staging of Nijinsky's "L'Après-Midi d'un Faune" from Labanotation. Hannah Russ is assisting Professor Julie Brodie in the staging and reading of the score, notated by Ann Hutchinson Guest. Russ began studying Labanotation, a system for recording movement in symbolic form, as a sophomore. The goal of this project is to bring cultural and historical enrichment to the Kenyon dance department and greater Kenyon community, while also emphasizing the value and importance of Labanotation. The hope is that the restaging of L'Après-Midi d'un Faune will not only pay homage to the original work but also spark curiosity and innovative inquiry with the audience.

Faculty Mentor: Julie Brodie

The Glocalization of Mobile Telephony in West Africa

MAX SMITH '18

Since the turn of the 21st century, sub-Saharan Africa has been the fastest growing mobile market in the world. Yet no African country manufactures mobile phones on a large scale, raising questions about the neutrality of the technology. Rather than interpreting the spread of mobile telephony as a form of submission to Western hegemony, this work highlights the local agency and ways in which technology from the outside, i.e. mobile telephony, is refigured and altered in locally meaningful ways. How can cell-phones help cure diseases? What are the latest mobile applications being developed in the "Silicon Valley of Cameroon"? How can a cell-phone plan keep young Guineans from sleeping at night? What are "Foot Soldiers" and the "Call-Box System"? Drawing on a study abroad semester in Cameroon and an internship with a mobile telecommunication company (MTN) in Guinea-Conakry, this project delves into West-African realities to analyze the manner in which the processes of consumer appropriation (bottom-up) and corporate acculturation (top-down) combine to shape the "glocalization" of mobile telephony. In doing so, it interrogates the alleged neutrality of technology and addresses the underlying tension at play between "globalizers and globalized" in the spread of mobile telephony in West Africa.

Faculty Mentor: Stephen Volz

Service Learning, Community-Based Learning or Research

Encouraging Creativity through Percussion Education

LEAH DUNBAR '20

Combining research on educational methods with weekly hours of teaching high school percussionists in the local community, this course aimed to develop the best teaching practices for percussion ensembles. Focus was placed on exploring the ways that music educators can encourage idiosyncratic musical creativity within students, extending their musicianship to what lies beyond the written composition. This presentation contains video clips of ensembles, teaching portfolio materials, and interactive instrument exhibits, aiming to explore the importance of creative thinking within music education.

Faculty Mentor: Andrea White

Learning to Teach and Learning to Dance at Columbia Elementary School

MAYA LUCKETT '18, HANNAH RUSS '18, SEVERINE KAUFMAN '18, LUCA AGUNOS '18, MARGARET ELLIS '20, RYDER SAMMONS '19

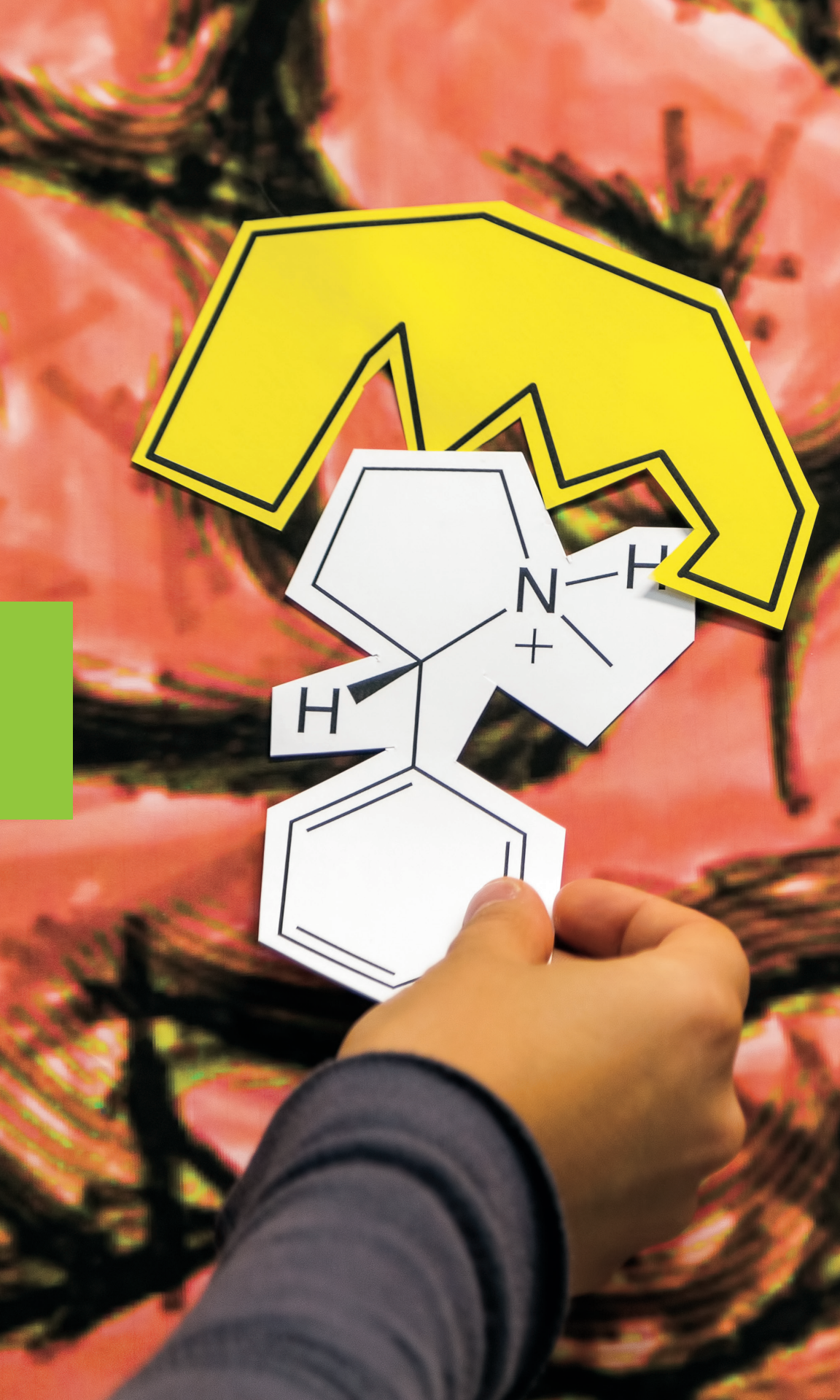
In fall 2017, students in Julie Brodie's Directed Teaching class engaged in a community-based learning project at Columbia Elementary School. The success of the course hinges on community engaged learning, as students develop through the application, practice and refinement of teaching philosophies. Maya Lockett '18, Hannah Russ '18, Severine Kaufman '18, Luca Agunos '18, Margaret Ellis '20 and Ryder Sammons '20 taught creative movement classes for the two kindergarten rooms and an after-school dance club they established at Columbia. Kenyon students collaborated with Columbia teachers, establishing goals and expectations. The focus was on teaching self-control, basic movement skills and self-expression. Dance was also utilized to enrich curricular subjects. The semester culminated with a performance exploring dances of different countries, presented to the entire school and community parents.

Faculty Mentor: Julie Brodie

Health Service Course: Diagnosing a Standardized Patient

SRILA CHADALAVADA '20 AND DEVEREN MANLEY '19

Srila Chadalavada and Deveren Manley participated in the Biomedical Analysis and Health Services course this past fall. Part of the course's curriculum was to volunteer at Knox Community Hospital's Emergency Department for four hours a week. During seminar discussions, we shared pertinent experiences from our shifts and the topics of diabetes, obesity, wound management, disaster relief and mental illnesses. Class discussions were enhanced through workshops such as the practice of diagnosing and delivering medical results to a standardized patient, Leeman Kessler, a Kenyon College alumnus. The experience allowed students to apply class knowledge in a collaborative



group effort and to understand the point of view of a medical professional. Chadalavada and Manley would like to provide this experience to peers on campus.

Faculty Mentor: Joan Slonczewski

A Model for Partnership with the Knox County Health Department

SAM TROPER '18, ETHAN BRADLEY '20, VIOLA HERZIG '20, ARIELA PAPP '20, KAITLYN GRIFFITH '21

Local health departments in Ohio are now required to be accredited by the Public Health Accreditation Board. As part of the accreditation process, a community health needs assessment must be performed. Over the last year, the Knox County Health Department has been working with community members to plan and implement the assessment. In addition to a health survey that was conducted early in 2018, focus groups with key community members were performed. The objective of the focus group discussions was to explore the health concerns among residents, how the social determinants of health impact one's ability to be healthy, and problems with accessing healthcare. The Health Department staff worked with students in the course Global Public Health Research Methods to design and conduct focus groups with community business leaders, older adults and teens. This presentation will discuss the process used to develop the focus group questions, transcribe the discussion, analyze the data from the discussion and write reports for the Health Department.

Faculty Mentor: Amy Ferketich

Borders in Play

EDUARDO VARGAS '18, ERIC THORNTON '18, NATE NOVAK '18, SAMUEL CANSECO '21, SCOUT CROWELL '20

Borders in Play is a community-engaged learning project that was born of an interest to translate the academic study of borderland theories to a real life context, thus exploring how borders travel well beyond lines on a map and into everyday life. Kenyon students and 45 fifth graders from Columbia Elementary explore the concept of borders through children's literature, which ranged from science fiction to Latinx short stories and poetry. Stories dwelt on issues such as bullying, social differences, bilingualism, ostracizing and marginalization. Through analyses of plot, setting, character and rhetorical devices, Kenyon students helped the children explore how these themes generate a border experience and negotiate the separations that these borders create in their own lives and community. In this presentation, students will share the Borders in Play archives housed in Digital Kenyon. Materials include: lesson plans, student reflections, photography, video and Columbia Elementary students' projects and views of the experience.

Faculty Mentor: Clara Román-Odio

Stories of Knox County

MARIA BRESCIA-WEILER '19, MARY GRACE DETMER '19, HELENA WINTERBOTTOM '20

This community-engaged learning project began as an independent study course, SPAN 493, Stories of Knox County, led by Professor Clara Román-Odio, and was catalyzed by the passion and interest of four students enrolled in the course: Maria Brescia-Weiler, Sarah Aguilar, Gabriel Jimenez Ekman, and Mary Grace Detmer. Stories of Knox County is an oral history project in which students interviewed a cross section of residents who represented a variety in age, belief systems, ethnicity, gender, socio-economic status, level of activity in the community and geographic location within the county (i.e. urban / rural). Students conducted and transcribed interviews and identified themes that emerged in the overlap between interviewees concerns, values and experiences within the community. One of the interviewees connected us with MTVArts, and Brescia-Weiler used excerpts of the interviews to create a script using entirely their own words. The play Rooted: Stories of Knox County was performed in the fall for an audience of members of the Kenyon and broader Knox County communities. This presentation shares an online exhibit, created with the support of librarian and archivist Jenna Nolt, and photos from the interviews and the performance, as well as a video recorded and edited by Helena Winterbottom, '20.

Faculty Mentor: Clara Román-Odio

Examining the Efficacy of Job Retraining Programs in Rural Ohio

ADAM ALUZRI '19

This proposal is an exhibit of my final project for Economics of the Public Sector, a class I am currently taking which is taught by Professor Katie Black. For this project, I am expected to identify a public policy, examine its background, and articulate an economic model describing it by analyzing available data. I have chosen to analyze job retraining programs. Given the recent news that the Siemens factory in Mt. Vernon is fully closing, job retraining programs are especially important to Knox County. In order to research these programs as they apply to Knox County, I hope to interview Diana Williams, the director of Opportunity Knox, a local jobs center. My goal is to learn what services the program offers as well as current issues faced by the organization. I would then research how these programs impact the community, how they differ from programs in a comparable service in an urban environment, and what potential improvements can be made to increase their efficiency and efficacy. While less crucial to the success of this project, I also plan to interview participants in these programs and employees or managers who work at the Siemens factory for additional anecdotal data. I may also seek interviews with other government officials involved in this topic, such as Jeff Harris with the Area Development Foundation and Matthew Kurtz with the Ohio Department of Jobs and Family Services. This project is a work in progress and as such, my presentation will be very open to suggestions and feedback. I believe that presenting my project during the CHIPS meeting will showcase a valuable connection between Kenyon and the greater Knox County area, in addition to dovetailing quite well with the surrounding area's current events.

Faculty Mentor: Katie Black

Global to Local Public Health

JADAH JONES '18, MAX SMITH '18, EVA WARREN '19

According to the Global Burden of Disease Study, the leading causes of disability and death worldwide have shifted from infectious diseases to chronic diseases. Many of the conditions that negatively impact health in low income countries are similarly experienced in the United States, particularly in rural America. During the 2017 Fall Semester, through our course Introduction to Global Public Health, we completed a group project for our final. This project, called Global to Local, involved researching an assigned health condition (malnutrition/obesity, addiction, mental illness, cardiovascular disease, sexually transmitted infections, and oral health) in a low/middle income country and in Knox County. Through this project, we discovered that the factors that influence health are not that different between the two regions and that solutions need to be culturally appropriate. In this presentation, we will discuss our work on the opioid crisis in Knox County and China. We will present the Knox County solutions, which we learned about through interviews with Knox County officials. As a comparison, we will share the approach that China is taking to treating addiction.

Faculty Mentor: Amy Ferketich

War as an Individual and Collective Trauma; Collaboration between Russian 340 and the Mount Vernon High School Class in U. S. History

NICK CULBERT '20, LOUISE FOSTER '18, MILA FRANK '20, GRACE HARRIS '20, SALOMON HERNANDEZ '20, ZACH HOLLANDER '21, JESSICA KHRAKOVSKY '18, SYDNEY MLADINEO '20, CHRIS SHEETS '20

During this spring semester, students from Russian Culture through Cinema class are exploring Soviet era films dedicated to WWII in collaboration with the Mount Vernon High School class in U. S. History. The Kenyon and MVHS students are analyzing cinema as a mediated representation of historical events and cultural identities. Both Kenyon students and MVHS students are learning to recognize ideological and artistic mediation discussing the reasons behind different ways war is represented in film. As a part of this collaboration Kenyon students give a presentation for the MVHS students to put the films into their historical context. They lead discussions among several groups of MVHS students. Kenyon students and MVHS student exchange the first drafts of their essays on the representation of war trauma in film and give each other feedback. They meet again to read and discuss the final versions of their essays. Kenyon students then write their reflections on the collaborative project and share them with each other and with the MVHS students.

Faculty Mentor: Anna Aydinyan

“Let’s Talk About Drugs!”

KELSEY TRULIK '18, TONEISHA STUBBS '18, MEGAN GOTHARD '19

Ever wonder about the route that medicine, food, drugs or other chemicals take in your body and the many factors that affect their impact? In CHEM 401, students gained a deeper understanding of chemical thermodynamics and kinetics through discussions of drug interactions in the body. Students then took their learning from the Kenyon classroom to design and implement drug/science educational lessons for local middle school students. Middle school classroom activities used baseballs and gloves, raw egg drops, Skittles, etc., to demonstrate how chemicals in foods and drugs could interact with receptors in the body and cause downstream effects — for example, how caffeine helps reduce sleepiness, how ethanol in consumable alcohol can affect physical and mental abilities, and how nicotine in tobacco products alters dopamine production in the brain. This community-engaged learning component was done in partnership with the Knox County Health Department and St. Vincent de Paul’s Middle School and they are sponsoring the dissemination of the lessons to the larger community. As the culmination of a chemistry-filled semester, Kenyon students wrote, designed and filmed educational videos to be integrated into these lessons.

Faculty Mentor: Sheryl Hemkin

Belize School Solar Power Project

SAGE BORNSTEIN '20, SAMUEL WOLF '19, CAITLIN KENNEDY '19, CARLY MCDONALD '20, SAMMY RUSSELL '20, PAIGE HADEN '20, GEORGIA STOLLE-MCALLISTER '20, JENNIE VANMETER '20, JACKIE O'MALLEY '21, HANNAH PETRICH '21, BEN BEREJKA '20, EMILY CRISS '21, WILLIAM MORTON '21

This spring break project involves 13 Kenyon students, two Kenyon faculty members, and one Kenyon staff, who will travel to Belize in central America to work to build solar power systems for schools. This is a continuation of an ongoing project Kenyon has been involved in since 2014. Two types of solar power systems will be installed. One type is for schools with no access to grid power. Here off-grid solar power systems with batteries are installed to capture solar power for both immediate use, or for use later from power stored in the batteries charged by the panels. The second type is for schools with power. In Belize power is very expensive, and sunlight is plentiful. A grid-tie system generates power during the day to offset power drawn from the grid. This saves money on electricity bills and is environmentally friendly.

Faculty Mentors: Jim Skon and Robert Alexander

Software System Design and development for Community Organizations

GHADA BAKBOUK '19, NICK DOWNEY '20, MIKU FUKUYAMA '18, BENNETT GRIGULL '18, ELIZABETH IDUMA '20, MALIK AHMED KHAN '19, HAROLD OGILVIE-THOMPSON '19, EMILY RACHEFAL '20, JOEY SCHUTZ '18, ELVIN SHRESTHA '19, CHRISTIAN SOLORIO '18, THOMAS STANTON '19, SPALDING VANCE '19

This course focuses on the processes and methods of developing software systems for real organizations. In order to learn these concepts with a realistic experience, and in a manner that provides value for the community, students are grouped into teams. Each of these teams

then partners with a real Knox County organization to investigate a real software need, and works to design and then prototype a solution for the need. This year's course has four teams of four students, assigned to projects at the Winter Sanctuary homeless shelter, the mayor's office of Gambier, the Knox County Health Department, and SPI, Knox County's children's science center. One or two members of each team will represent all four projects.

Faculty Mentor: Jim Skon

Stories of the African Francophone Community of Columbus

MARIE-SOPHIE DINSEL '21, CLAIRE FRAISE '21

In the Fall 2017, on the 3rd of December, the students who were taking the French advanced course FREN321 met some members of the African Francophone Community of Columbus in a Senegalese restaurant of Columbus. The conversations were all in French, and these African migrants in the US, with a wide variety of background and experience, some who came here as Green card migrants and other as refugees, shared their stories with the students. It took the whole beginning of the semester to prepare for this CEL project. After studying various Francophone communities in the US and doing research on the African communities in the US, the goal was to meet with some local members of these communities, exchange with them and record some of their stories.

The students prepared specifically for this meeting, did a two minute video presentation of themselves telling a personal story about themselves or a transformative story that they shared in advance with the African participants. They passed the IRB certification and trained for the interview. And finally they created an online Digital Storytelling project based on the interview they had with the members of the African Community.

Faculty Mentor: Pierre Dairon

New Beginnings

ALEXANDER J REID '19, ASHLEY MARIE MARTENS '18, AMANDA SIMPKINS '18, SRILA CHADALAVADA '20, PAIGE MATIJASICH '20

Students in the fall course FILM 291 Women in Film in South Asia collaborated with the community service organization New Directions to record the experiences of its staff, board members and others. This project utilized students' research and interview skills as their documentation reaffirmed the work by service organizations helping survivors of violence cope and rebuild their lives. Students produced a film on the services provided by New Direction to create awareness about domestic and sexual violence and promote the prevention workshops and services provided in the shelter. This film was screened at the Wright Center for the staff of New Directions, community members and Kenyon administrators, faculty and students.

Faculty Mentor: Uma Vangal Shivakumar

Undergraduate Research

Ethnic Bias in Moral Judgments

QUINN ADAM '20

The issue of attributions of responsibility and how they are affected by contextual variables has been thoroughly studied by both psychologist and experimental philosophers. In this study, we attempted to investigate the subject in relation to the social issue of ethnic bias. We changed the name of the agent performing two morally questionable actions to an African-American-sounding name and a white-sounding name, and varied the apparent reasonableness of their causes based on how much they "need" to act in a certain way. By asking participants to judge the agents in terms of blame and other criteria, we intended to not only confirm the existence of ethnic prejudice and diagnose its prevalence among our subjects, but also to understand, to some extent, the role that it plays in moral judgments. Even though the results provided almost no insight on the effects of ethnic bias in the particular cases that were considered, the study provides a strong stepping-stone for further investigation of the role ethnic bias plays in our moral judgments and corroborates previous results of the effects of constraint in attributions of responsibility.

Faculty Mentor: Alexandra Bradner

Remodeling Research Methods in Art History

ROSA RUMORA '19

"Remodeling Research Methods in Art History" investigates the capabilities of three-dimensional modeling for the purpose of research and education in art and architecture. With digital rendering and 3-D printing taking hold in today's discipline of art history, this study seeks to uncover how students could benefit from engaging with this technology in an experimental and educational context. The investigation is approached via an in-depth, architectural study of Kenyon's Bexley Hall. Elements of the building, such as its physical composition, stylistic significance, and history as a religious and academic institution, are uncovered. By using this information to create renderings and printed models of Bexley Hall, it is revealed how modeling software (specifically the program Blender) functions, and how it can teach its users about the content it produces. This study exhibits the benefits of the investigative involvement required to produce visually informative renderings. It merges traditional art historical research with the use of art and technology to create an alternative learning experience that reaches both its conductor and the consumers of the products of its results. In a discipline where experiencing objects, artwork, and buildings in an exhaustive manner is essential, digital modeling can literally add another dimension to the traditionally image-based study of art history. "Remodeling Research Methods in Art History" gives a comprehensive look at Bexley Hall and therefore a better understanding of how this shift in pedagogy could evolve the ways students approach the study of art and architecture.

Faculty Mentor: Sarah Blick

Oxford University Press Online Bibliographies: Octavio Paz

J. SEBASTIÁN CHÁVEZ ERAZO '18

This project's focus was to create a selective critical bibliography of Mexican Nobel Laureate Octavio Paz (1914-1998) for Oxford Bibliographies' new online series. Oxford Online Bibliographies are intended as a useful research tool to replace outdated bibliographies and indexes with current concise article recommendations. As such, each article in Oxford Bibliographies does not contain an exhaustive list of sources written about a given topic, rather, a list of approximately 100 critical sources curated to establish the key works, leading authors, major debates, and ideas that have formed the core of scholarship in the field. Given the scope of Octavio Paz's oeuvre, his impact on Latin American literature and world culture, and the massive amount of critical scholarship written about him since 1931, a concise critical bibliography for Paz is essential to help guide future scholarship about the author. Curating and annotating the bibliography was divided into three stages. The first stage of the research, accomplished in Summer 2017, was dedicated to careful selection of sources done in three rounds. During the second stage, from August 2017 to February 2018, the bibliographic entries were read, annotated and revised. Such sources included journal articles, books, book chapters, and anthologies. The project's final stage involves writing a critical article that examines and illuminates the bibliographical selection. The annotated bibliography will be published late 2018 to early 2019.

Faculty Mentor: Clara Román-Odio

Bargained Guilt: Incentives for Innocents to Plead Guilty

JOSHUA WALMER '18

In a nation where every citizen is guaranteed a right to a fair trial, it may seem surprising that so few criminal defendants choose to exercise that right. As shown by the high percentage of exonerated convicts which previously plead guilty, there is some portion of those arrested must have been innocent. This presentation will examine the structure and history of the modern institutions surrounding the plea bargaining process. These institutions determine the incentives which agents in the criminal justice system face, incentives which can explain why an innocent person would plead guilty. This presentation will begin with an overview of the history of today's plea bargaining system. By looking towards its origins and the legal climate from which plea bargaining emerged, we can better understand how it came to shape today's justice system. The presentation will summarize and examine the impact which various Supreme Court decisions have had on the plea system, its constraints, and how they have shaped the bargaining power of the various agents involved. The presentation will continue with an overview of the predictions which can be made about plea bargaining outcomes using game theory. The presentation will then examine the available statistics gathered on plea bargaining acceptance rates, and will conclude with an analysis of the problems regarding the availability of this data, and the reason it is difficult to collect.

Faculty Mentor: Joel Richeimer



Virtual Psychology—Media Research Using an Immersive Virtual Environment

KEVIN TOWLE '19

Media Research in psychology is increasing both in popularity and in the versatility of scientific questions it can answer. Virtual reality is the newest form of media to become popular and effectively marketable to the public sector. Its emergence generates numerous research questions that provide utility in understanding human behavior. The Kenyon Gaming and Mediated Environments Laboratory (GaME Lab) is currently planning projects that explore different aspects of the research question “What are the similarities and differences of virtual reality compared to both real life and other mediated channels and what are the consequences of those on human behavior. GaME lab will set up a fully immersive experience that includes visual, audio, tactile and physical space using the HTC Vive and Steam platform. Our demonstration will provide visitors the chance to explore one of several different virtual reality environments, and compare and contrast that experience to real life and other popular forms of media. We hope that our research will help us understand how concepts such as aggression and social anxiety translate across various platforms that vary in fidelity.

Faculty Mentor: Patrick Ewell

Modeling Accessible Art: Photogrammetry and Kenyon’s Art History Study Collection

CLARA PINCHBECK '18, CONNER MCELLOWNEY '19

The study of art has historically been accessible to a privileged few. As white, upper-class, able-bodied men possessed the status and the resources to own and visit works of art, they monopolized the scholarship. Technological advances have changed this. Photographic reproductions, digitization, and the internet make works of art accessible to a more diverse public, breaking down barriers of race, class, and gender. In recent years, 3D technology has enhanced accessibility even further by providing viewers with a simulated virtual experience of objects. While the Art History Department’s Study Collection is catalogued on Digital Kenyon, 3D models could make the objects even more accessible. My project seeks to correct this shortcoming through a case study focusing on one object. I will render a 3D model using PhotoScan software, make the rendering accessible on Sketchfab.com and Digital Kenyon, and create a physical replica using a 3D printer. The greater impact of my 3D modeling will make an inaccessible object accessible to the general public, promote research and scholarship, bring attention to Kenyon as a scholarly resource, and provide a roadmap for the 3D digitization of objects in the collection and at other institutions.

Faculty Mentor: Brad Hostetler

Growing History: Agricultural Production and Experiential Learning

NICK LEIBOWITZ '18

Since the start of my Sophomore year, I have lived and worked at the Kenyon Farm full time, year-round — during the school year as well as the summer. For the past two summers, I have grown Native American heirloom varieties of corn, beans, and squash in a polyculture intercropping method known as the “Three Sisters” using Native American practices. As a history major, my focus is Native American history and agriculture. The opportunity afforded to me by Kenyon and the Farm to practice the farming that I read about has been incredibly meaningful, bringing what I learned in the classroom out into the real world in ways I do not believe many other Kenyon students get to experience. The first year I planted the Three Sisters, I failed — I tried to take on too much too fast, did not have the best educational resources available to me, and was not able, because of timing that summer, to focus on the project. The second year, however, was massively successful. Using materials from a seminar on corn — and its effects on the world, past and present — taught by my advisor, Professor Bottiger, I was able to enjoy a kind of learning and fulfillment beyond what I could have expected.

Mentors: Professor Patrick Bottiger and Ryan Hottle

Measuring Transcription Level Changes of HIBDH in *Arabidopsis thaliana*

KRISTEN EDGEWORTH '20

Plant growth is initiated by both internal and external factors. The catabolism of the branched-chain amino acids, leucine, valine, and isoleucine help supply the emerging radical with important metabolic precursors. The K. Rouhier lab has been studying the roles of three valine-specific enzymes in embryo development and plant growth, and discovered that two of these enzymes are necessary for the two processes to proceed normally. A third enzyme, 3-hydroxyisobutyrate dehydrogenase (HIBDH), has recently been characterized but the expression pattern of the gene encoding the protein has not been extensively tested. This summer, our work focused on evaluating the gene expression of HIBDH under various early-growth conditions in *Arabidopsis thaliana*. Consistent duplicate and triplicate PCR products have suggested the possible involvement of alternative splicing within the target gene, causing difficulty in acquiring accurate qualitative data for the expression of the HIBDH at specific periods of development. The data obtained here provides a foundation for further investigation of the HIBDH gene and its role in plant development.

Faculty Mentor: Kerry Rouhier

Exploring Dark Matter as a Wave Function

MAGGIE MURPHREE '19

For many years, we thought we knew the nature of Dark Matter—the Weakly Interacting Massive Particle (WIMP) Miracle, which asserted that if Dark Matter were produced in the Early Universe, the particles, predicted by supersymmetry, would get too cold and stop interacting. This implies that there are a set number of dark matter particles that should be detectable, but there have been no detections in experiments. How else can we explain the nature of Dark Matter? We examine the nature of Dark Matter in the Schrödinger interpretation. Our motivations for exploring this are that WIMP Dark Matter lacks laboratory support and on large scales, the distribution of wavelike Dark Matter mimics particle Cold Dark Matter. We describe wavelike Dark Matter as a coherent wave function with an interference pattern determining its distribution; here we use a complex field using the Schrödinger equation with a gravitational potential.

Faculty Mentor: Tom Giblin

Incentivizing Compliance: The Use of Rewards and Sanctions in a Juvenile Mental Health Court

SARAH JENSEN '18

Mental health courts are voluntary specialized dockets that connect offenders with mental illness to psychological and psychiatric treatment services, place participants on intensive probation, and require participants to attend regular status review hearings to monitor progress. At these status review hearings, participants each receive a reward, neutral outcome, or consequence, depending on what the court deems appropriate based upon the participant's progress. Despite the general consensus that mental health courts successfully aid the participant in becoming a productive member of society, as seen through a decrease in recidivism and in mental health-related hospitalizations, little is known as to why these courts work. This research project focuses on the reward, neutral, or consequence outcome as contributing to the overall progression of participants in mental health courts. This study uses data from court hearing observation and status hearing review reports at the Knox County Juvenile Mental Health Court.

Faculty Mentors: H. Abbie Erler and Ric Sheffield

An Experimental Philosophy Investigation: The Factors of Ethical Decision Making

BEN REINGOLD '20, CATHERINE HORWITZ '20, JORDON HOROWITZ '20, SAM HUMPHREY '20

This experiment studies how people evaluate the morality of four different vignettes about stealing. It examines which factors of moral decision making are the most influential and discusses which philosopher's views are the most prevalent in people's moral reasoning. The factors tested include: the reasoning for a theft to be committed (intention), the results of the theft (consequence) and the society in which the theft takes place. The conclusion: people's moral determinations depend on the intention behind the act as well as the consequences of the act. The society in which an act takes

place does not impact the perceived morality of that act. People consider deontology and consequentialism as opposed to virtue ethics in their moral decision making. It was also found that younger people respond to changes in intention and consequence at higher rates than older people, which allows the hypothesis that young people's moral judgements may be more heavily influenced by deontology and consequentialism.

In the report, members of the research team offer their thoughts about the merits of experimental philosophy.

Faculty Mentor: Alexandra Bradner

A Novel zebrafish mutant reveals fewer axons in the CNS and hypomyelination in the PNS

ANU MUPPIRALA '19

Myelin is a critical component of proper neuronal function in vertebrate organisms. Produced by oligodendrocytes in the CNS and Schwann cells in the PNS, myelin wraps the axons of neurons, thus forming the myelin sheath in order to enhance signal propagation. However, damage to the myelin sheath can result in many debilitating neuropathies in humans, such as Multiple Sclerosis or Charcot-Marie tooth disease. Therefore, it is essential to investigate the underlying genetic mechanisms that govern glia development and myelination in order to advance our understanding of demyelinating conditions. Originally identified from a large-scale forward genetic screen conducted in zebrafish, *stl93* reveals reduced axon count in the CNS and hypomyelination in the PNS, as indicated via transmission electron microscopy (TEM). Since the function of oligodendrocytes and Schwann cells both depend on multiple neuronal factors, this combined phenotype suggests that the causative gene regulates neuronal function. Subsequent whole-genome-sequencing analysis identified two strong candidate genes, both implicated in neuronal processes such as retrograde transport and signaling. Therefore, impaired neuronal activity may indirectly influence the behavior of the surrounding myelinating glia, resulting in both improper myelination by Schwann cells in the PNS and improper neuronal development in the CNS.

Faculty Mentor: Sarah Petersen

Reading Babur's Dreams: Religiosity and Kingship in 16th-Century Central and South Asia

HENRY BRILL '19

The Muslim ruler Zahiruddin Muhammad Babur founded the Timurid-Mughal Empire in the early 16th century. His memoir, entitled *Vaqāy'ī* ("Events") and commonly referred to as the *Baburnama*, is considered to be the first autobiography in Islamic literature and is an important source for understanding the rich history of medieval Central and South Asia. Many scholars tend to downplay the role of religion in the *Baburnama*, disassociating Babur from Islam. This project offers new perspectives on the role of religion in the *Baburnama*. It examines how evident Babur's religiosity is in his dream narratives, which describe his encounters with *Sufī awliyā* ("saints"). These episodes suggest that Babur adhered to an Islamic worldview that emphasized the

importance of one's relationships with the awliyā. He also appears to have attributed his early victories in battle, which ushered him out of his qazaqliq ("throneless times") and thus allowed him to reach political ascendancy in India, to his visionary encounters with Khwaja Ubaydullah Ahrar, an influential Naqshbandi Sufi saint. Furthermore, Babur seems to have evaluated the religiosity of his contemporaries in terms of their devotion to and respect for Khwaja Ahrar.

Faculty Mentors: Nurten Kilic-Schubel and Vernon Schubel

Muslim Spain's Collective Memory of al-Andalus

CLAIRE OXFORD '18

Spain's historical memory of Muslim rule on the Iberian Peninsula, al-Andalus (711-1492) is complex, with competing narratives across Spain's ideological spectrum. While conservatives such as Claudio Sánchez Albornoz in *España: Un enigma histórico* (1975) treasure the centuries-old story of the Reconquest and the Spanish Inquisition's heroism in expelling the Moors, Américo Castro's *La realidad histórica de España* (1954) lauds Islam's contributions to Spanish society, privileging al-Andalus as an example of convivencia (or "coexistence") between Muslims, Jews and Christians that left its mark on the Spanish landscape, architecture and people. These arguments for reinterpretation contest the legacy of al-Andalus and continue to influence Spanish discourse on issues pertaining to the contemporary Muslim community (i.e. the protection of religious freedoms, the realities of terrorist threats from al-Qaeda and ISIS and the tensions that arise with an increase in immigration to Spain from Muslim-majority countries). By analyzing fictional or semi-autobiographical literature written by Muslims in Spain, we find narratives that complicate the hegemonic memories of al-Andalus by subverting prevailing narratives that either demonize Muslims in Spain as "los moros" reinvading the Peninsula, principally through migration or conversion, or romanticize the tourist-brochure brand of coexistence that often belies enduring social, political and economic inequalities and discrimination in contemporary Spain.

Faculty Mentor: Travis Landry

Investigating the Optical Properties of a Particular Double Perovskite Thin Film

RYAN MUZZIO '18

Since the birth of electronic systems, thin films have been used in a wide array of applications. In particular, double perovskites, a complicated crystalline structure, have a variety of unique properties that are extremely useful for electronic systems. It is important for scientists to understand the different interactions between the film and light, which manifests itself in the film's dielectric function. This presentation will display experimental research on the dielectric function of a particular double perovskite thin film Sr₂CrReO₆, which has spintronic applications.

Faculty Mentor: Frank Peiris

Chemical screening in zebrafish to reveal small molecules that regulate myelination

EMMA KLUG '18, SOPHIA LETCHER '18

Myelin is a multilayered sheath that in cases axons to promote efficient conduction of action potentials through the nervous system. In vertebrates, Schwann cells produce myelin in the peripheral nervous system (PNS). Gpr126 mutants, found in a forward genetic screen, are unable to correctly myelinate their PNS. The adhesion G-protein coupled receptor gpr126 is crucial for myelination of the PNS. Phenotypically, this results in reduced myelination through the peripheral nervous system. In a drug screen, we treated gpr126 mutant zebrafish with a Pharmakon 1600 library of small molecules during the critical period in their development for PNS myelination. Of those drugs, we found four that recovered some myelination. We want to uncover the pathway by which each of those drugs recovers myelination. Our current efforts are focused on apomorphine hydrochloride and testing it on an allelic series of zebrafish mutants. If apomorphine binds Gpr126 directly, we would expect it to only rescue mutants with an intact signaling domain. We hypothesize that intact Gpr126 is necessary for apomorphine to be effective, implying that apomorphine is acting on the known pathway for PNS myelination.

Faculty Mentor: Sarah Petersen

Characterization of a zebrafish peripheral myelin mutant

KRISTEN PITTS '19

Myelin is the protective sheath that surrounds axons and allows for efficient electrical signaling throughout the body. While it is known that myelin is produced by oligodendrocytes in the central nervous system (CNS) and Schwann cells in the peripheral nervous system (PNS), the genetic and molecular mechanisms that regulate myelination are not fully understood. Illuminating these mechanisms may help researchers provide more effective therapeutics to currently incurable neurodegenerative conditions such as Multiple Sclerosis and Charcot-Marie-Tooth disease. A recent zebrafish forward genetic screen revealed a myelin mutant with reduced myelination in the PNS. Whole-genome sequencing analysis of this mutant, stl144, revealed that the mutation of interest was linked to chromosome 8. A list of candidate genes was generated using gene-mapping techniques, and the known functions of these genes were recorded. Carriers of the mutation were identified using in situ hybridization staining of myelin basic protein (mbp) of their progeny. Establishing a list of candidate genes and identified stl144 heterozygous carriers has set the framework for further characterization of the stl144 mutation. Future work will determine the causative gene lesion responsible for the stl144 phenotype and the developmental pathway affected. These efforts will ultimately broaden our understanding of the genetic mechanisms that lead to myelination in the PNS.

Faculty Mentor: Sarah Petersen