



# A Kenyon Showcase

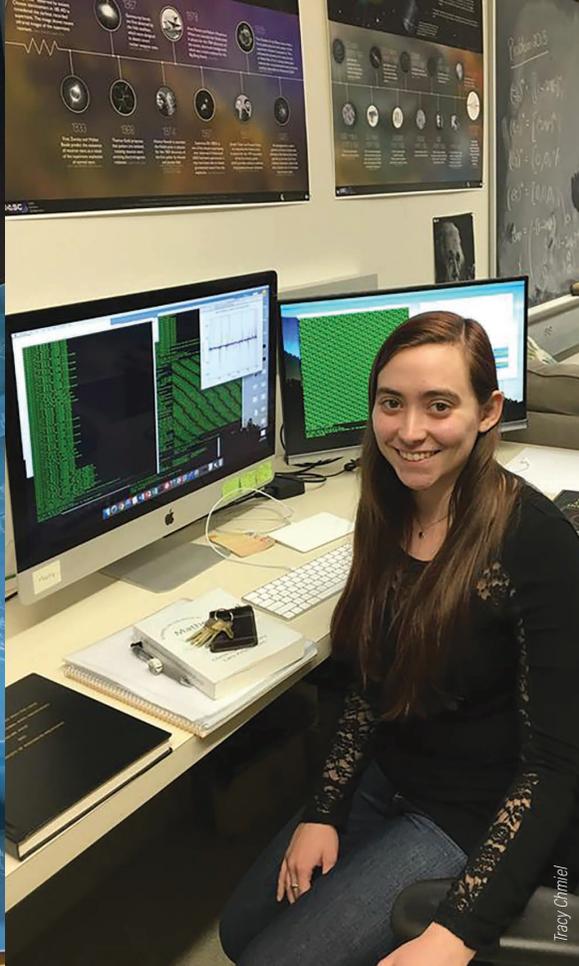
CELEBRATING HIGH-IMPACT PRACTICES AT KENYON

04.04.17





Liam Horstman



Tracy Ghmiel



Samantha Leder



Bryce Nichols

*Welcome to the second annual showcase of intellectual and creative life on campus. This is a chance for students to show how they have applied their classroom learning in extended opportunities.*

High-impact practices can be research projects, artistic performances, internships, community-based research, senior honors theses, off-campus study or collaborative assignments. This event's booths may illuminate the academic program at Kenyon with a film or a poster about a Summer Scholars project.

What will be clear from all of these presentations is that the collaborations are the product of the close interactions between students and faculty at Kenyon. These collaborations are key to the successful liberal arts education happening on the Hill. It is in these high impact practices where liberal arts students exercise their growing intellectual and critical capacities. These projects are rehearsals for future callings, allowing students to anticipate how their unique interests, skills and training can result in a career of meaning.

This exhibition celebrates student success on the Hill. We share information with one another about the amazing things our students and faculty are doing, and in the sharing we foster intellectual discussion and creative engagement on campus.

# Exhibitors

## Kenyon Athletic Center

04.04.2017

### American Studies

- *Samantha Leder '17*

### Anthropology

- *Hannah Echt '17*

### Art

- *Ella Jones '17 and Justin Sun '20*

### Art History

- *Samantha Berten '17, Claire Koelling '19 and Rose Rumora '19*

### Athletics

- *Grace Pilz '19, Sam Clougher '17, Heather Pacheco '18 and Curt Williams '18*
- *Matthew Ruskan '17*

### Biology

- *Dylan Barrett-Smith '17, Christina Ennis '18, Mia Fox '19, Jon Hansen '17, Erin Keleske '18, Sam Lisak '19, Eliana McCann Smith '17, Heather Pacheco '18, Sarah Speroff '18 and Hannah Wedig '19*

### Chemistry

- *Bryce Nicholls '18*
- *Members of CHEM 371 Advanced Lab*

### Classics

- *Natalie Ayers '17, Daniel Olivieri '19 and Avery Baldwin '17*

### Commencement

- *Elizabeth Siphron '17, Samuel Clougher '17, Madeline Maldonado '18 and David Anderson '19*

### Comparative World Literature

- *Jessie Alperin '18, Gabrielle Bing '19, Bianca Bunoiu '19, Ines Forjaz de Lacerda '17 and Tianqi Luo '17*

### Economics

- *Claire O'Donnell-McCarthy '17*
- *Katherine Guyot '17*

### English

- *Julia Plottel '17 and Katie Dembinski '18*
- *Tyler Raso '19, Mollie Greenberg '19 and Katie Jimenez-Gray '18*
- *Emily Daluga '17, Stephanie Fongheiser '17, Alana Gale '17, Alex Kirshy '17, Ben Koses '17, Brianna Levesque '17, Andrea Lindquist '17, Megan Otto '17, Grayson Ponti '17, Jan Rivera-Pagan '17, Deirdre Sheridan '17, Abbie Titcomb '17, Victoria Ungvarsky '17 and Molly Wyrsh '17*

### Environmental Studies

- *Carolina Andrade '19, Teahelahn Keithrafferty '19 and Caitlin Kennedy '19*

### Gund Gallery

- *Rose Bishop '17, Jenna Wendler '17 and Natasha Siyumbwa '17*
- *Emma Garschagen '19*
- *Emma Klein '17*
- *Katie Lovins '17*
- *Jonah Edwards '18*
- *Lewis Turley '17*

### KEEP (Kenyon Educational Enrichment Program)

- *Benjamin Adekunle-Raji '17, J. Sebastián Chávez Erazo '18, Rachel Maas '17 and Toneisha Stubbs '18*

### Kenyon Review

- *Natalie Keller '19*

### Latino/a Studies

- *Daniel Garcia-Archundia '17*

### Law and Society

- *Sarah Jensen '18*
- *Edgar Martin '17*

### Library and Information Services

- *Channa Childs '19, Nathan Grosh '19, Rediat Mersha '19, Rachel Nguyen '19, Elvin Shrestha '19, Kirsti Buss '18, Kalkidan Aseged '17, Maggie Griffin '18 and Alyssa Williams '17*

### Mathematics

- *Sam Troper '18*

### Modern Languages and Literatures

- *Max Smith '18*

### Music

- *Reagan Neviska '17*

### Neuroscience

- *Sarah Naguib '17*
- *Kelsey Hauser '17 and Kia Barclay (Wellesley College)*
- *Sarah Mohr '17 and Anxu Wang*
- *Henry Quillian '17 and Jsue Parr*

### Office for Community Partnerships

- *Olivia DeSilva '17*

### Philosophy

- *Adam Brill '17*

### Physics

- *Tracy Chmiel '17*
- *Austin Hulse '19*
- *Christian Solorio '18*

### Political Science

- *Schuyler Stupica '19 and Thomas Rosenfeld '17*

### Psychology

- *E.J. Brautigan '17, Wilson Captein '18, Olivia Walsh '17 and Ar'Reon Watson '18*

### REACH (Recognizing Each Other's Ability to Conquer the Hill)

- *Kyla Spencer '18 and Molly Cox '19*

### Scientific Computing

- *Ghada Bakboub '19, Coire Gavin-Hanner '18, Malik Ahmed Khan '19, Tess Neau '19 and Alex Seaver '17*

### Sociology

- *Maya Street-Sachs '17*

### Special Collections and Archives

- *Cameron Austin '20, Delaney Barker '20, Jessica Berger '17, Jenna Bouquot '19, Maddie Bradford '17, Eva Buchanan-Cates '19, Liam Horsman '17, Sarah Jensen '18 and Sean Seu '19*

### Statistics

- *Evan Frazier '17*

### Summer Internships

- *Gianna Biaggi '17, Caroline Chang '18, Emma Brown '17, Tony Amolo '17 and Elgin Martin '17*

### Summer Programs Office

- *Frances Matthews '18*

### Women's and Gender Studies

- *Hanna Anain '19, Alexandra Kanovsky '19, Lily Alig '19, Annmarie Magnus '19, Julia Cashell '19, Madeline Hightower '19, Grace Pilz '19, Steven Leinbach Jr. '19, James Lituchy '19, Rachel Cohn '19 and Rachel Roux '19*

# Abstracts

## American Studies

### The Sudbury Education Model

SAMANTHA LEDER '17

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In the Sudbury model, there is no curriculum and there are no formal assessments or grades. Students spend their time delving into their passions and interests and learn entirely at their own pace within an environment that is adapted to meet their needs. Last semester, Leder spent Mondays and Wednesdays at the newly-opened Kokosing Valley School operating on the Sudbury model. This semester, she continues her involvement with the school as an independent study within American Studies. Spending full days at the school enables her to maintain close relationships with students and staff, to fully immerse herself in the school's culture and to collect qualitative data in the form of observations and interviews. Throughout the semester, she will also read texts on the philosophy of Sudbury and our traditional education model.

*Faculty Mentor: Peter Rutkoff*

## Anthropology

### Loved to Death: Sustainable Tourism in the Northern Philippines

HANNAH ECHT '17

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Sustainable tourism is based on the idea of sustainable development, which preserves environmental resources for future generations while allowing the present generation to meet their own needs. Baguio City provides an example of a city whose tourist attractions of natural beauty and favorable climate are threatened by not just the industry that promotes them, but by the people enticed by those qualities. Tourism activities and tourists themselves add to increased consumption of the city's goods and services, which has exacted an enormous toll on the city's environment. Shifting to a more rural context of tourism, the village of Batad contains rice terraces that are part of the Rice Terraces of the Philippine Cordilleras World Heritage Site. Problems of abandonment due to low rice yield, poor irrigation and damage and reduced farm labor that contributed to the site being placed on the World Heritage in Danger List in the past still exist today. What is key to long term sustainability of the industry in both areas is the inclusion of all relevant interest groups — members of the local community, government officials, NGOs and private companies — in all phases of tourism development. Investigated in this study were the various goals, barriers and predictions for tourism of the above tourism interest groups. Because these places were “loved to death,” they now face an uncertain future.

*Faculty Mentor: Sam Pack*

## Art

### Discipline Intersections in “Math in the Studio”

ELLA JONES '17 AND JUSTIN SUN '20

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Students from the Math in the Studio class will explain student created imagery on display and discuss what new skills they are learning from a course that unites what are considered very disparate disciplines. In the Math in the Studio class, topics include: symmetry and pattern, linear perspective, transformations of space, fractal geometry and visualization of the fourth dimension. Emphasis is placed on the creation of artwork, focusing initially on drawing, learning digital skills to design patterns, moving to enhancing drawing with collage and appropriation, then small-scale sculpture and site-specific installation. Students also gain familiarity with historical and contemporary artists who have employed mathematical thinking in their work. Students develop a mathematical mode of inquiry that can be used in both the creation and the analysis of artwork.

*Faculty Mentor: Karen Snouffer and Judy Holdener*

## Art History

### Three-Dimensional Modeling and the Study of Art History

SAMANTHA BERTEN '17, CLAIRE KOELLING '19 AND ROSE RUMORA '19

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Students have explored innovative software such as Google's SketchUp, Blender, 3 Dimensional Printing and Digitization as a way to analyze art historical data. The research methods group is attempting to elevate the experience and education of art and architecture from a technology based perspective. What is at stake when scholars and students research art by remodeling and re-experiencing it in a multi-faceted and multi-disciplined manner? Students read about contemporary digital research as well as helpful critiques while working through various software tutorials and experimental projects.

*Faculty Mentor: Sarah Blick*

## Athletics

### Beyond the Game

GRACE PILZ '19, SAM CLOUGHER '17, HEATHER PACHECO '18 AND CURT WILLIAMS '18

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The Athletic Department will showcase the accomplishments and experiences of student-athletes: study abroad, Fulbrights, NCAA Post-Grad scholars, high GPAs, community service, etc. Student-athletes will discuss how being a student at Kenyon affords them the opportunity to learn and grow through experiences beyond the classroom. Kenyon student-athletes will give presentations about how their experiences enhance what they learn in the classroom and the importance of athletics in their overall college experience.

*Mentor: Erin O'Neill*

## Kenyon Sports Connection

MATTHEW RUSKAN '17

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The first student to join the Kenyon Sports Connection, Ruskan trained in broadcasting for nearly a year. Over the last three years, he's provided live play-by-play and color commentary for a variety of Kenyon sports. His presentation will involve interviewing student-athletes and coaches, explaining his broadcasting experience over the last four years and inviting members of the general audience to join him for an impromptu interview about the role of athletics on an NCAA Division III campus.

*Mentor: Marty Fuller*

## Biology

### Think Local, Act Global: Modeling Responses of Ohio's Species to Global Climate Change

DYLAN BARRETT-SMITH '17, CHRISTINA ENNIS '18, MIA FOX '19, JON HANSEN '17, ERIN KELESKE '18, SAM LISAK '19, ELIANA MCCANN SMITH '17, HEATHER PACHECO '18, SARAH SPEROFF '18 AND HANNAH WEDIG '19

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This presentation will discuss a laboratory project that engaged students in original climate change research using online biodiversity and climate data resources and near state-of-the-art species distribution modeling approaches. Each student selected a single species of interest, with a focus on plants and animals inhabiting our local region. Based on climate change scenarios from the Intergovernmental Panel on Climate Change, the student then projected the potential habitat for their study species in the year 2070. After researching the natural history of their study species, each student used distributional data from the Global Biodiversity Information Facility (GBIF) as well as climate norms and future projections to construct, analyze and visualize computational species distribution models and to predict species' responses to future climate change.

*Faculty Mentor: Drew Kerkhoff*

## Chemistry

### Evaluation of Mosquito (*Aedes aegypti*) Organic Anion Transporters

BRYCE NICHOLLS '18

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The Gates Foundation estimates that every year 750,000 people die from mosquito-borne diseases. During a blood meal, mosquitoes voluntarily ingest a large variety of foreign substances; some are essential to metabolic function (metabolites) and others are potentially harmful and need to be excreted through the urine (xenobiotics). Their xenobiotic transport system has made the development of mosquitocides challenging. The relationship between mosquito excretory transporters (specifically organic anion transporters) and the structures they preference could yield valuable insight into

pesticide development. Previous work has shown that charge plays a significant role in xenobiotic transport. This study injected mosquitoes with a variety of compounds that differ in their number of sulfonate groups (R-SO<sub>3</sub><sup>-</sup>). It was found that the addition of a sulfonate group significantly decreased the toxicity of the compound to the mosquitoes. While it is unclear if this decrease in mortality is due to preferential excretion, this work does yield promising results for the development of adjuvants to current mosquitocides.

*Faculty Mentor: Matthew Rouhier*

## Dear Governor Kasich

MEMBERS OF CHEM 371 ADVANCED LAB

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3-Hydroxyisobutyrate dehydrogenase (HIBDH) is a relatively uncharacterized enzyme found in almost all organisms. Its role in cellular metabolism could be linked to an organism's growth and development or it could be exploited for the benefit of making biodegradable plastics by "green" methods. This semester students in CHEM 371 are isolating and characterizing HIBDH from *Arabidopsis thaliana*. No known HIBDH has been characterized in *Arabidopsis* to date, therefore the data collected in this class will be novel and exciting. In preparation for their new discovery, students wrote letters or white papers to elected or appointed government officials with the goal of convincing them that this enzyme is worth their attention. Students will share their letters and the most up-to-date data on this novel enzyme.

*Faculty Mentor: Kerry Rouhier*

## Classics

### Mapping Ancient Texts: Visualizing Greek and Roman Travel Narratives

NATALIE AYERS '17, DANIEL OLIVIERI '19 AND AVERY BALDWIN '17

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This presentation exhibits new work done by student-researchers for the digital humanities project Mapping Ancient Texts: Visualizing Greek and Roman Travel Narratives (MAT). The goal of MAT is to create digital visualizations of textual descriptions of travel from the classical world for the purposes of teaching and research. Student-researchers at Kenyon have been working since 2015 to format data and develop a queryable web-based geospatial interface. The MAT interface allows users to query a dataset of ancient travel narratives using filters such as language, genre, author and method of travel. The resulting visualizations allow users not only to read an individual travel narrative mapped onto the route it describes but also to investigate how a given narrative engages with other texts that also mention a particular place or journey. Examples are available on the project website, [mappingancienttexts.net](http://mappingancienttexts.net). This presentation will focus on new interface features developed since last year's presentation at CHIPs, such as the ability to select different data sets simultaneously and to represent journey segment directionality. It will also present visualizations of an extensive new data set.

*Faculty Mentors: Micah Myers and Joe Murphy*

## Commencement

### Commencement Student Managers

ELIZABETH SIPHRON '17, SAMUEL CLOUGHER '17, MADELINE MALDONADO '18 AND DAVID ANDERSON '19

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Commencement student managers provide hands-on leadership to manage all aspects of the annual Commencement ceremony. Student managers interview and hire student workers, set the work schedule for senior week and Commencement Weekend, and manage logistics during the event.

*Mentor: Pamela Faust*

## Comparative World Literature

### OH5 Hackathon CWL Team

JESSIE ALPERIN '18, GABRIELLE BING '19, BIANCA BUNOIU '19, INES FORJAZ DE LACERDA '17 AND TIANQI LUO '17

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The OH 5 Student Hackathon invited teams from Denison, Kenyon, Oberlin, Ohio Wesleyan and the College of Wooster for a 24-hour project to explore, contextualize and extract interesting narratives from a data set of more than 170,000 digitized pages of college newspapers dating from 1856. The Comparative World Literature team will discuss their research results, their software tools and the data analytic process that included data scrubbing, machine learning and visualization.

*Faculty Mentors: Kate Elkins and Jon Chun*

## Economics

### Unemployment and Opioids: A National Epidemic Exacerbated

CLAIRE O'DONNELL-MCCARTHY '17

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In the last 10 years, opioid and heroin overdose deaths have more than doubled. While this epidemic has begun to receive national media coverage, there is not much economic analysis related to opioids. Analysis of statewide unemployment rates, prescription rates and overdose deaths over more than a decade showed whether unemployment and prescriptions contributed to the growth of this epidemic. Separating states with high and low unemployment also revealed that high unemployment states have suffered more overdose deaths, on average, than low unemployment states.

*Faculty Mentor: David Harrington*

## The Impact of Over-the-Counter Access to Emergency Contraception on Reproductive Choices and Sexual Behavior in the U.S.

KATHERINE GUYOT '17

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Emergency contraception, also called the morning-after pill, became a fully over-the-counter drug in the United States in 2013. Previously, the FDA had required individuals under the age of 18 to obtain a doctor's prescription for the drug, though some states circumvented this age restriction by allowing pharmacists to prescribe emergency contraception without a physician's express permission. Using variation in state and federal policies, Guyot found that increased access to emergency contraception has had no significant effect on birth or abortion rates but may have contributed to higher STD rates, particularly for teenagers. These findings are consistent with the wider literature and suggest that individuals substitute away from more effective means of contraception when emergency contraception becomes more widely available.

*Faculty Mentors: Jaret Treber and Kathy Krynski*

## English

### Postcolonial America

JULIA PLOTTEL '17 AND KATIE DEMBINSKI '18

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In "Postcolonial Americas" (ENGL 391.03), students compare colonial texts with their twentieth-century rewritings and adaptations and organize their inquiries around the "postcolonial" as a category of time and space for reading the literary and cultural history of the Caribbean. After a semester of studying these, as well as a range of critical and theoretical texts, the course culminated with a symposium (over four class meetings) in which students presented and discussed papers-in-progress before revising them for final submission. Class members will present on their individual research as well as discuss their experience of the symposium as an experiment in active and collaborative knowledge production.

*Faculty Mentor: Matthew Suazo*

### Mentoring Young Writers and Readers

TYLER RASO '19, MOLLIE GREENBERG '19 AND KATIE JIMENEZ-GRAY '18

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Students will discuss their community-engaged learning individual study project with Mount Vernon Middle School. The work has included such activities as small-group discussions of poetry and writing exercises. This is a CEL pilot, investigating to see how a program like this could work within or alongside the English department's curriculum. The Kenyon students are also doing research and/or longer-form writing projects about this experience, and so undergraduate research, collaborative learning and community-based learning are the three high-impact practices this presentation will discuss.

*Faculty Mentor: Sarah Heidt*

## digitaldevon.kenyon.edu: A Student's Virtual Guide to England's West Country

EMILY DALUGA '17, STEPHANIE FONGHEISER '17, ALANA GALE '17, ALEX KIRSHY '17, BEN KOSES '17, BRIANNA LEVESQUE '17, ANDREA LINDQUIST '17, MEGAN OTTO '17, GRAYSON PONTI '17, JAN RIVERA-PAGAN '17, DEIRDRE SHERIDAN '17, ABBIE TITCOMB '17, VICTORIA UNGVARSKY '17 AND MOLLY WYRSCH '17

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During their nine-month residency in the U.K., students on the 2015-16 Kenyon-Exeter Program created a website based on site visits, archival exploration, interviews and fieldwork that immersed them in local English culture and communities. Working in teams and focusing on six topics—art and architecture, foodways, the seacoast, myths and folklore, Dartmoor, Devon at war—the students transformed their research into several forms of digital media (personal essays, descriptive narratives, analytic articles, photo-essays and even recipes) and directed their digital travel guide toward a general internet audience.

*Faculty Mentor: Kim McMullen*

## Environmental Studies

### Solar Power and Technology for Belize Schools

CAROLINA ANDRADE '19, TEAHELAIN KEITHRAFFERTY '19 AND CAITLIN KENNEDY '19

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Since 2014, Kenyon students have traveled to Belize (and Guatemala) to install solar power systems for schools in Belize, to create internet school computer labs, to make classroom presentations about technologies and advantages of grid-tie and off-grid solar power systems and to lead power usage analysis of a Belize school. This presentation will include a solar panel demonstration, a computer presentation with pictures of the solar install process and another computer presentation with live data from the Belize Solar projects in Belize.

*Faculty Mentor: Jim Skon and Robert Alexander*

## Gund Gallery

### Curated Exhibitions: *Black Women/Black Lives* and *Zapitista: Imagery of the Peasant Revolutionary*

ROSE BISHOP '17, JENNA WENDLER '17 AND NATASHA SIYUMBWA '17

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Student participants will present documentation and visual materials relating to two student-curated exhibitions. *Black Women/Black Lives* (Jan. 20-Feb. 5) explored the portrayal of black women in art and material culture inspired by the civil rights and black liberation movements of the 1960s through the 21st century. *Zapitista: Imagery of the Peasant Revolutionary* (April 24-June 30) examines the use of Emiliano Zapata iconography and Mexican folk-nationalist imagery in ephemera, films and media interventions by the Zapatistas alongside selections of prints by masters of the Mexican public art projects of the early 20th century. The exhibit explores the ideological links and slippages between these politicized images and considers why the uniquely Mexican visual language of the Zapatistas resonates so strongly with other alter-globalization and human rights movements.

*Mentors: Jodi Kovach, Natalie Marsh and Christopher Yates*

## Operations and Visitor Experience for *Off the Hill*

EMMA GARSCHAGEN '19

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This presentation will include documentation and visual materials relating to a student-juried and organized exhibition of Kenyon student art work. Designed to connect with the broader community, *Off the Hill* (November 14-December 4) was presented at The Place at the Woodward in downtown Mount Vernon.

*Mentors: Christopher Fahlman, Megan Evans and Christopher Yates*

## Artist Interview Videos

EMMA KLEIN '17

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Gund 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 Promotions AV team of Kenyon students will present a series of artist interviews produced this year.

*Mentors: Christopher Yates and Caroline Culbert*

## Associates of the Gund Gallery Blog

KATIE LOVINS '17

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Orchestrating the launch and scope of the Associates of the Gund Gallery Blog was an important project for the social media team (<https://gundassociates.wordpress.com>). Every week, Gund Gallery Associates contribute stories to the blog based on a student-generated and -designed schedule. Student presenters will discuss the blog's creation and provide access through the use of a laptop.

*Mentor: Caroline Culbert and Christopher Yates*

## Family Day, Story Time and Education Guide for *Black Women/Black Lives*

JONAH EDWARDS '18

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A fundamental mission of education departments at museums is to provide resources for educators. Student participants will present an education packet designed specifically for the exhibition *Black Women/Black Lives* and for future works being added to the Gund Gallery Collection. In addition, students will present the educational activities they've planned and executed for the museum's family day and story time events.

*Mentors: Megan Evans and Christopher Yates*

## Orchestrating Art Loans

LEWIS TURLEY '17

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Orchestrating an art loan program is no easy task. Involved in every step of the process, Gund 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. Student participants will explain and present documentation. Additionally, this spring two of our Collections students will present their work at the Association of Academic Museums and Galleries conference in Eugene, Oregon.

*Mentors: Robin Goodman and Christopher Yates*

## KEEP *(Kenyon Educational Enrichment Program)*

### A Kenyon Community for Success, Success for the Kenyon Community.

BENJAMIN ADEKUNLE-RAJI '17, J. SEBASTIÁN CHÁVEZ ERAZO '18, RACHEL MAAS '17 AND TONEISHA STUBBS '18

KEEP promotes excellence at Kenyon College — in the classroom, in social engagement and in diversity and inclusion. To foster a network of support, KEEP builds a cohort of scholars who commit to learning best practices for success and then modeling them for others. In the KEEP summer session, scholars engage in high impact learning practices such as intensive writing and collaborative work on research problems. At the same time, scholars also practice effective engagement outside of the classroom through career workshops, community participation and discussions and explorations of difference. After the summer program, KEEP scholars continue to develop their abilities through continuous advising, periodic reflection and mutual support. These benefits endure and accumulate, equipping scholars to contribute, challenge and lead in the College's intellectual, professional and organizational life. They contribute their unique perspectives to campus discourse and ultimately help the Kenyon community understand the challenges of diversity and inclusion.

*Faculty Mentors: Ivonne García and Simon Garcia*

## Kenyon Review

### The Kenyon Review Outreach Program

NATALIE KELLER '19

For more than five years, Kenyon Review Associates and interns have provided free creative writing workshops for local children at Paragraphs Bookstore in downtown Mount Vernon, Ohio. Keller will present a poster detailing the work Kenyon students have done to organize and run these writing workshops, which reach dozens of area children each year. The poster will include examples of student work, sample lesson plans, source texts used to inspire student writing and photographs from the workshop.

*Faculty Mentor: Tory Weber*

## Exhibitors

**Row 1:** OH5 Hackathon CWL Team, Ecology Laboratory

**Row 2:** Katherine Guyot, Special Collections and Archives, Claire O'Donnell-McCarthy, Matthew Ruskan

**Row 3:** Biochemistry Advanced Lab, Daniel García-Archundia, Kenyon-Exeter Program

**Row 4:** Math in the Studio; Loved to Death; Kenyon Review Outreach Writing Workshop

**Row 5:** KEEP



## Latino/a Studies

### Bilingual College Preparation Program for Latino/a Youth: A Community-Engaged Learning Partnership with the Mount Vernon Public Library

DANIEL GARCIA-ARCHUNDIA '17

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Envisioned by the community of Knox County Latinos/as, the Bilingual College Preparation program seeks to empower Latino/a students to achieve at the highest level to prepare for college entry. As a Community Engaged Learning project (CEL), Kenyon students applied their academic research on education inequalities, the Latino/a Civil Rights Movement, and standardized testing strategies to develop and facilitate a sustainable partnership with Mount Vernon Public Library. Using bilingual pedagogies inspired by the Kenyon Intensive Language Model (KILM), Kenyon students work weekly with 7th through 12th graders to improve their critical reading, math, vocabulary, science and test-taking skills to prepare for taking the SAT and ACT. The collaborative efforts of Kenyon administrators, faculty and students empower first-generation students and their families to successfully navigate the complicated college admissions process. This CEL project also provides students with professional experiences necessary for future careers in bilingual education, nonprofit collaboration and minority rights activism.

*Faculty Mentor: Clara Román-Odio*

## Law and Society

### Mental Health Courts: An Innovative Solution to the Criminalization of Mental Illness

SARAH JENSEN '18

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This presentation will examine mental health courts in Ohio, focusing on the Knox County Juvenile Mental Health Court, certified in September of 2016. This court utilizes therapeutic jurisprudence in its treatment of mentally ill juvenile delinquents. Rather than placing these at-risk youths behind bars, the Knox County Juvenile Mental Health Court features an intensive, structured program that provides juveniles with psychiatric and psychological treatment services and encourages reintegration into the community. This ethnographic study examines the impact of the court on juvenile participants, their families and the community as a whole. In order to gain a holistic understanding of the effects of this court, this study combined four research methodologies: 1) interviews conducted with juvenile participants, their family members and court and judicial personnel, 2) surveys conducted with juvenile participants, 3) observation of weekly status hearings, and 4) archival research through court files. This study provides unique insight into the role and impact of the juvenile mental health court, a topic that is surprisingly neglected by previous research.

*Faculty Mentor: Abbie Erler*

## Remorse and the Condemned in American Capital Punishment

EDGAR MARTIN '17

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In his book *Why People Obey the Law*, Yale Law Professor Tom Tyler discusses two theories of why people obey the law: normative or instrumental. In an instrumental perspective, people choose to obey or break the law based on a cost/benefit analysis in which you obey the law when the possible punishment for a crime isn't worth the benefit of the crime. Under normative theory, people obey the law and apologize for wrong doings because they believe certain crimes are immoral. In Martin's research, these two theories were applied to the apologies made in the last statements of the condemned. At the moment of execution, we would assume that there are no instrumental benefits from apology that a condemned person can receive. Since 1976, 1,436 condemned prisoners have been executed in the United States. Martin was able to collect and validate the last statements of 920 individuals from newspapers, correctional facility records and from public organizations. From this data, Martin asks: Do the condemned apologize, and, if so, why? Do normative theories explain apologies in last statements, or are their still instrumental benefits to apologizing?

*Faculty Mentor: Ric Sheffield*

## Library and Information Services

### Research and Reference Intern Program

CHANNA CHILDS '19, NATHAN GROSH '19, REDIAT MERSHA '19, RACHEL NGUYEN '19, ELVIN SHRESTHA '19, KIRSTI BUSS '18, KALKIDAN ASEGED '17, MAGGIE GRIFFIN '18 AND ALYSSA WILLIAMS '17

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This program 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. Additionally, the reference intern program enables students to develop critical thinking and interpersonal skills, which are not only helpful in academia but also in any future career.

*Mentor: Aimee Jenkins*

## Mathematics

### SMS Classification and Spam Control for Sproxil, Inc: An Application of Naïve Bayes Classifier

SAM TROPER '18

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Spam detection is crucial for many applications. In this project, a probabilistic machine learning technique, called a Naïve Bayes Classifier, was used in order to sort spam messages from non-spam messages. Several other computational methods were also applied to sort SMS messages for Sproxil, Inc.

*Faculty Mentor: Elly Farnell*

## Modern Languages and Literatures

### Mobile Telephony and Local Agency in Cameroon: “Cameroonian Ways of Appropriation”

MAX SMITH '18

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Last semester, Smith was part of a study abroad program in Cameroon. For four months, he lived with families in urban and rural areas. Smith noticed that they used their mobile phones in unexpected ways, so he conducted a month-long independent study to interview and survey Cameroonians about their ownership of a global technology, i.e. mobile telephony. How can you charge a cell-phone when there is no electricity? How can a mobile phone cost \$5? How can cell-phones help cure diseases? How can mobile phones ruin relationships? This presentation will challenge the “neutrality” of communications technology and highlight the importance of agency rooted in local culture. Through the prism of “globalizers vs. globalized,” it will examine the potential for local appropriation which could make cell phones more user-friendly and culturally compatible in sub-Saharan Africa.

*Faculty Mentor: Pierre Dairon*

## Music

### Mapping Kenyon’s Soundscape

REAGAN NEVISKA '17

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This interdisciplinary project bridges the gap between creative expression, lived experience and research. Through a combination of readings, listening, documentation and representations of individual experience, this independent study set out to aurally capture the essence of Kenyon. Audio of the Franklin Miller Observatory, the Church Bell Tower, Sunset Point and Middle Path attempted to explore familiar settings in a new way. The culmination of this project is an interactive and publicly accessible webpage which focuses the attention of the visitor not on what they already know about

Kenyon but rather on the sonic elements that hide within familiar settings. The work draws inspiration from the interdisciplinary field of sound studies, which encompasses approaches from across the social sciences and the humanities to examine issues related to the cultural study of sound and listening.

*Faculty Mentor: Maria Mendonça*

## Neuroscience

### GABAA2 Agonism Improves Social Memory in Mice

SARAH NAGUIB '17

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Autism Spectrum Disorder is an illness characterized by aberrant social interactions, communication deficits and repetitive behaviors. The BTBR T+ tf/J (BTBR) is an inbred mouse strain that possesses several hallmark behavioral phenotypes of Autism Spectrum Disorder, including reduced social interactions and impaired social recognition. One of the characteristic hallmarks of this strain of mice is its reduced level of inhibitory neurotransmission in comparison to their C57BL/6J (B6) counterparts (Han et al., 2014). The primary mediator of inhibitory neurotransmission in the brain is the neurotransmitter GABA acting on its receptors, particularly the GABAA. Thus, it is likely that autistic-like behaviors in these BTBR mice could result from these decreased levels of inhibitory neurotransmission. Previous findings in our laboratory have indicated that selective subunit activation of  $\alpha$  significantly improves spatial memory in the BTBR mice. The current study assesses the hypothesis that  $\alpha$ 2 stimulation will improve social memory deficits in the BTBR mouse model as well.

*Faculty Mentor: Hewlet McFarlane*

### Unusual Locomotor Response to Morphine in Mice

KELSEY HAUSER '17 AND KIA BARCLAY (WELLESLEY COLLEGE)

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Autism Spectrum Disorder (ASD) is a neurodevelopmental disorder associated with several cardinal traits including social interaction deficits, communication deficits and high anxiety levels. It has also been argued that motor coordination deficits should also be considered a core feature. The BTBR T+tf/J (BTBR) strain of mice serve as a model for autism, and previous studies in our laboratory have shown BTBR mice have diminished levels of striatal dopamine. It has been postulated that ASD might stem from a fundamental dysfunctioning of the reward and motivation pathway. In the present study, we investigated the differential effect of morphine on several different measures of general locomotor activity in BTBR mice and in control mice in a dose-dependent analysis. We hypothesized that the diminished striatal DA in the BTBR mice will translate to diminished locomotor response to systemic opiate treatment, relative to controls.

*Faculty Mentor: Hewlet McFarlane*

## Effect of Isolated Facial Features on the Identity Sensitive

SARAH MOHR '17 AND ANXU WANG

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One of the earliest neural markers of familiar face perception is the n250r event-related potential (ERP), recorded primarily from inferior occipitotemporal electrodes. This ERP is evoked by a target face, which is presented some time after the presentation of a prime face. If the prime and target faces are the same identity, there will be a pronounced negative deflection in the waveform at 200-300 ms after the onset of the target face. The n250r is observed, albeit smaller, even when the prime and target images are of the same individual taken at different angles or expressing different emotions. It has therefore been proposed that the n250r reflects the matching of a perceptual representation of a face to a stored memory representation of that face. It is currently unknown whether face parts, such as eyes and mouths, are effective primes capable of producing the n250r. We investigated this by presenting full faces, eyes, and mouths of famous celebrities in three priming conditions: same identity-same image, same identity-different image, and different identity. Full-face primes evoked the n250r in both the same identity-same image and same identity-different image conditions. The face-part primes, however, did not evoke a significant n250r (though there was a non-significant trend for eye primes). These results suggest that early face identification mechanisms rely on holistic perception of the face and are thus not effectively engaged by the perception of isolated face parts.

*Faculty Mentor: Andrew Engell*

## Can You See Me Now? EEG Investigation of Non-Conscious Face Processing

HENRY QUILLIAN '17 AND JSUE PARR

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Humans glean a wealth of social information from faces, making efficient detection of conspecific faces evolutionarily advantageous. It has therefore been suggested that the brain might detect and process faces non-consciously. However, evidence supporting this notion is equivocal. This is, in part, due to the methodological challenge of presenting faces without conscious perception for adequate durations to acquire signal with sufficient signal-to-noise. In the current EEG experiment, these issues are addressed by using a novel combination of binocular rivalry with continuous flash suppression (CFS) and fast periodic presentation (FPP). A flashing checkerboard was presented to one eye while our stimuli of interest were presented to the other. The flashing checkerboard tends to dominate conscious perception and thus keeps the images presented to the “suppressed” eye unperceived. The unambiguous results of the current study strongly suggest that face-selective cortical processing requires conscious perception.

*Faculty Mentor: Andrew Engell*

## Office for Community Partnerships

### Prophecy: From the Classroom to the Community

OLIVIA DESILVA '17

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In the religious studies class “Prophecy” there are two intertwining objectives. The first is to examine the ancient roots of the prophetic voice. The second is to focus on specific social injustices, poverty and food insecurity, by becoming personally informed through volunteering a minimum of two hours a week at the Salvation Army of Mount Vernon and Interchurch Social Services. Kenyon students become enlightened to a world with which they are unfamiliar and inspired by their deep reflections to do more.

*Faculty Mentor: Miriam Dean-Otting*

## Philosophy

### A Bodily Response to Sartre’s Theory of Emotions

ADAM BRILL '17

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The paper examines Jean-Paul Sartre’s theory of emotions. Sartre sees emotions as a type of consciousness. Brill examined both the strengths and the weaknesses of such an account. In particular, he paid closer attention to both the role of the body (in the understanding of emotions) and what we have learned from neuroscientists.

*Faculty Mentor: Joel Richeimer*

## Physics

### Modeling Corrections to the Fabry-Perot Cavity for the Calibration of Advanced LIGO Instruments

TRACY CHMIEL '17

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The LIGO (Laser Interferometer Gravitational-Wave Observatory) scientific collaboration works to directly detect the presence of gravitational waves in the universe. A gravitational wave is a ripple in spacetime predicted by the general theory of relativity. The asymmetric motion of large masses such as black holes and neutron stars produce ripples that propagate through the universe at the speed of light. LIGO uses large Michelson interferometers to detect small distortions in spacetime between stationary hanging masses. This project is interested in modeling the Fabry-Perot cavity filter as a function of time. The Fabry-Perot cavity is used to increase the effective beam length of the interferometer and consists of a partially transmitting mirror causing light to bounce back and forth between the mirror and the end of the arm. The goal of this project is to create and implement a method which periodically updates the Fabry-Perot cavity filter of the LIGO interferometers as the light storage time in these cavities changes. This results in a reduced error for the calibrated LIGO data and decreases the error for estimating the characteristics of the sources of gravitational waves.

*Faculty Mentor: Madeline Wade*

## Axiomatic Informational Thermodynamics

AUSTIN HULSE '19

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Axiomatic approaches to thermodynamics build the theory up from minimal assumptions, elucidating its basic concepts and logical structure so as to understand the kinds of systems to which it applies. We adapted the axiomatic system of R. Giles (Mathematical Foundations of Thermodynamics, Pergamon Press, 1964) to include a description of the acquisition and use of information by thermodynamic agents. Our new axioms govern the creation and erasure of physical records and their ability to store information. From our axioms, we are able to establish several important results, including the connection between thermodynamic entropy (which determines the irreversibility of a possible process) and the Shannon-Hartley measure of the information contained in an agent's memory. In our structure, systems are regarded as sets of distinct states, of which each state is a possible true state of the system. The Second Law of Thermodynamics takes a very simple form: the impossibility of a process taking a system to a proper subset of itself.

*Faculty Mentor: Ben Schumacher*

## The Decay and Gravitational Effects of Non-Topological Structures After Inflation

CHRISTIAN SOLORIO '18

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In a self-resonant model of the inflation field (a theoretical field that mechanizes inflation), there is the potential for generating an oscillon-dominated phase of the universe. An oscillon is a non-topological structure that is massive, localized and long-lived. These structures are semi-stable due to the fact that they slowly lose energy over time through scalar radiation. In order to understand the gravitational effects of these structures, a simulation code was modified to include linear perturbations. Although the oscillons are very energy dense (more than 20 times the average energy density of the universe), the perturbations never grew large enough for perturbation theory to break down. A future implementation of numerical relativity would more accurately capture the dynamics of the highly dense oscillons.

*Faculty Mentor: Tom Giblin*

## Political Science

### Seeking Refuge

SCHUYLER STUPICA '19 AND THOMAS ROSENFELD '17

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What does it take to be granted asylum in the United States? Last fall, students in the "Immigration, Citizenship and National Identity" class (PSCI 355) provided research in support of real asylum cases pending in Cleveland's immigration court. This presentation encapsulates the findings of two of these research projects. The first is on behalf of a 44-year-old Peruvian national who applied for asylum based on experiences of sexual

assault and repeated violent acts targeting her family. The second case involved a Ugandan economist in her mid-50s who sought asylum after her husband and father were tortured and killed by the government. Stupica argues that the Peruvian woman ought to be granted asylum due to a well-founded fear that deportation would result in repeated victimization due to her status as a woman, which qualifies as a particular social group. For the Ugandan economist, Rosenfeld argues that her alleged political affiliations would subject her and her family to torture in Kampala, the country's capital.

*Faculty Mentor: Nancy Powers*

## Psychology

### Cultural Portrayals of Gender Stereotypes and their Implications

E.J. BRAUTIGAN '17, WILSON CAPTEIN '18, OLIVIA WALSH '17 AND AR'REON WATSON '18

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Students working with psychology professor Sarah Murnen have studied how representations and products in popular culture are influenced by gender and race/ethnicity of those portrayed. This research is conducted using the technique of content analysis, where products and representations are systematically examined to determine the prevalence of stereotypes. Ar'Reon Watson and Olivia Walsh will present some data on how famous female and male athletes are represented on the internet. Olivia will also present the results of her Kenyon Summer Science project, a content analysis examining themes in rap music in the United States vs. Ghana. Cultural representations can influence the behavior of individuals in ways that perpetuate stereotypes, and this is the subject of other research in our lab. Wilson Captein will present research on women and the behavior of self-sexualization (research also conducted by Lucy Bhuyan and Thais Henriques), and E.J. Brautigam will discuss his honors project concerning Asian American women's experiences with pre-menstrual symptoms, which are hypothesized to be influenced by culture-specific beliefs.

*Faculty Mentor: Sarah Murnen*

## REACH (Recognizing Each Other's Ability to Conquer the Hill)

### Closing the Gap in Student Retention

KYLA SPENCER '18 AND MOLLY COX '19

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REACH aims to retain underrepresented students at Kenyon by providing them with support and guidance. REACH recruits and trains upperclassmen students to mentor first-year students to ensure their success in adjusting academically, emotionally and socially to Kenyon. This presentation will display photos from events, testimonials from REACH members and a description of the mission of REACH peer mentoring. Students will be available to answer the question, "How does the existence of mentoring programs like REACH impact underrepresented students?"

*Faculty Mentor: Jacky Neri Arias*

## Scientific Computing

### Collaborative Software Development

GHADA BAKBOUK '19, COIRE GAVIN-HANNER '18, MALIK AHMED KHAN '19, TESS NEAU '19 AND ALEX SEAVER '17

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The new course “Software Development” teaches the processes, techniques and best practices for developing quality and reliable software systems. A major component of successful software system development includes significant collaboration. Thus, this ongoing course requires teams of students to work together, utilizing methods such as pair programming, design and code reviews and agile development practices. Each team chooses a multi-component project which will involve live interaction between web pages running on different computers. These systems will be either a two-person game or a two-person live chat. Teams will be available to demonstrate the result with laptops and to discuss how the team oriented approaches worked for them.

*Faculty Mentor: Jim Skon*

## Sociology

### Joining the Education-in-Prison Movement: A Proposal for an Inside Out Course at Kenyon

MAYA STREET-SACHS '17

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Street-Sachs spent last summer doing research and logistical planning to create an education-in-prison program at Kenyon. Creating a course through the Inside-Out Center (<http://insideoutcenter.org/>) would mean that 10 Kenyon students travel to one of three local prisons to engage in a semester-long course with 10 incarcerated individuals, all taught by a Kenyon professor. Street-Sachs is conducting an independent study with an interested Kenyon professor this semester to create a syllabus for the pilot Inside-Out course. This presentation will describe Street-Sachs's process of research, the history of education-in-prison as a movement and what community members have said about the idea.

*Faculty Mentor: Jennifer Johnson*

## Special Collections and Archives

### Student Program

CAMERON AUSTIN '20, DELANEY BARKER '20, JESSICA BERGER '17, JENNA BOUQUOT '19, MADDIE BRADFORD '17, EVA BUCHANAN-CATES '19, LIAM HORSMAN '17, SARAH JENSEN '18 AND SEAN SEU '19

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Student workers in the Kenyon archives on a daily basis transcribe letters written by the founders of the College, process confidential files, prepare for upcoming exhibits, and respond to research requests. Questions range widely in subject matter and complexity, and some require intensive research through historic course catalogs, maps, person and

subject files or Kenyon publications. This presentation will discuss the intricacies and methodologies behind answering research requests. Research requests, in particular, improved the students' ability to conduct scholarly research, to think critically about primary and secondary sources, to improve their academic writing and to enhance customer service and professional communication skills.

*Mentor: Elizabeth Williams-Clymer and Abigail Miller*

## Statistics

### A Markov Chain Method to Estimate Expected Runs in Major League Baseball

EVAN FRAZIER '17

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A Markov chain is a type of random process that advances from one state to another based on certain transition probabilities. Baseball lends itself well to Markov analysis, given the nature of the sport and the way in which each game progresses. Using data from the 2016 MLB season and computer simulations, Frazier was able to model a game of baseball as a Markov chain and calculate the expected number of runs scored per game for each of the 30 teams in the sport.

*Faculty Mentor: Brad Hartlaub*

## Summer Internships

### Summer Internship Stipend Fund

GIANNA BIAGGI '17, CAROLINE CHANG '18 (WITH ADDITIONAL WORK FROM EMMA BROWN '17, TONY AMOLO '17 AND ELGIN MARTIN '17)

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The Summer Internship Stipend Fund provides assistance to students with financial need who take part in unpaid internships around the world. This is a key way Kenyon maintains student access to unique and transformational unpaid opportunities. Students must submit an application, budget and proof of internship site. At the close of the internship, they are required to submit a final project that explains how they utilized their funding. This presentation will highlight some of the final projects received from 40 students. These diverse experiences give an in-depth look at what students were able to gain academically, socially, professionally and personally through their journey.

*Mentors: Leslie Harding and Chris Kennerly*

## Summer Programs Office

### Summer Programs Internship

FRANCES MATTHEWS '18

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The Summer Programs Office oversees weddings, conferences and retreats conducted at Kenyon from June to August. It provides high-quality services in event management, scheduling and general information to the College's clients. Frances Matthews serves as the summer programs liaison, and as such she is the primary contact between clients and Barbara Kakiris, manager of summer programs. Matthews confirms everything from numbers of attendees to food and beverage needs and works with Kakiris and event specialists to oversee the execution of approximately 80 events over the course of two months. Frances was the first student named to the position because she demonstrated the skill set and personality for such a high-profile job through her position during the academic year working for the chief business officer and summer programs.

*Mentor: Barbara Kakiris*

## Women's and Gender Studies

### Tales from the Crypt: Gender in the Cemetery

HANNA ANAIN '19, ALEXANDRA KANOVSKY '19, LILY ALIG '19, ANNMARIE MAGNUS '19, JULIA CASHELL '19, MADELINE HIGHTOWER '19, GRACE PILZ '19, STEVEN LEINBACH JR. '19, JAMES LITUCHY '19, RACHEL COHN '19 AND RACHEL ROUX '19

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These posters will describe research projects carried out collaboratively by two instructors and 12 students in a joint anthropology and women's and gender studies class (ANTH/WGS 291). Cemeteries register the narratives that survivors tell about their dead. As such, they are significant repositories of cultural knowledge. How do cemeteries represent gender? How have representations of gender in cemeteries changed over time? Students collected original data from local cemeteries and collaborated to investigate how conventions such as marker types, layouts, titles, epitaphs and iconography represent conventional views of gender in circulation at a particular time in Gambier, Ohio.

*Faculty Mentors: Laurie Finke and Kimmarré Murphy*

## Exhibitors

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**Row 1:** *Emily Vachon, Max Smith, Sarah Naguib*

**Row 2:** *REACH, Evan Frazier, Edgar Martin, Sarah Jensen*

**Row 3:** *Schuyler Stupica, Thomas Rosenfeld, Frances Matthews, Belize Service Learning Project*

**Row 4:** *Collaborative Learning in Software Development Teams, Austin Hulse, Christian Solorio, Sam Troper*

**Row 5:** *Sarah Mohr, Adam Brill, LBIS reference interns*



