

11TH ANNUAL GUILFORD UNDERGRADUATE SYMPOSIUM

WEDNESDAY, APRIL 18
9:45 AM - 6 PM



HEGE LIBRARY ACADEMIC
COMMONS, GUILFORD COLLEGE

Co-sponsored by the Guilford College Friends of the Library.

Message from the President

Dear Guilford College Community:

Welcome to the 2018 Guilford Undergraduate Symposium (GUS). This event is always a source of great pride for Guilford College as we celebrate the remarkable research scholarship of our diversely talented and dedicated students. Every year I am amazed by the depth and creativity of their work, as well as the confident poise they demonstrate in presenting their projects.

GUS vividly illustrates the profound impact of faculty mentorship on student success at Guilford College. Working side-by-side with faculty, our students are gaining invaluable insights and highly practical problem-solving experience that will give them tremendous advantages in competing for graduate/professional school or their first career endeavor.



As we look ahead to the coming Guilford Edge, I eagerly anticipate ever-growing participation and innovation in future GUS events as collaborative, team-based projects such as those on display here today become central to the educational experience of every Guilford College student.

Please join me in congratulating our student scholars and their faculty mentors for the exceptional work they have produced together. I also want to thank Melanie Lee Brown, Director of Research and Creative Endeavors, and the GUS Planning Committee: Robert Whitnell (Co-Chair), David Hildreth, David Limburg, Brenda Swearingin, Mark Dixon, Suzanne Bartels, and the Research and Educational Services Team- Tamika Davis and Tierney Steelberg, for their vision and steadfast commitment to quality undergraduate scholarship opportunities. I would also like to take this opportunity to thank the Guilford College Friends of the Library for their generosity in the Co-Sponsorship of 2018 GUS.

I trust you will enjoy this opportunity to engage with our impressive and inspiring students. May your immersion into academic excellence at Guilford College be a richly rewarding experience.

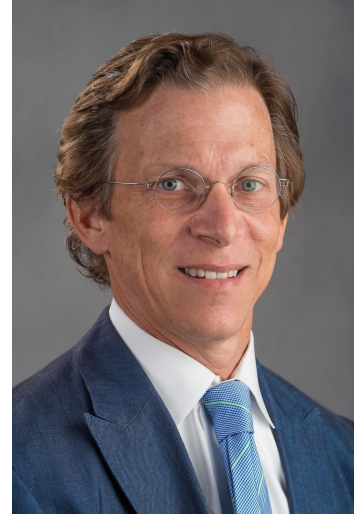
Sincerely,

Jane K. Fernandes
President

Message from the Vice President of Academic Affairs and Academic Dean

Dear Guilford Community:

Welcome to the Guilford Undergraduate Symposium (GUS)! GUS provides an opportunity for students to showcase their scholarly and creative work to the entire community. Guilford students will be engaging in conference presentations, exhibitions of visual work, panel discussions, and performances. This work can originate from coursework or individually mentored projects at Guilford, and at other institutions here and abroad. The timing of GUS is propitious, coming at the end of the academic term when it is good to be reminded of the accomplishments of all our students. It also affords faculty and staff the chance to reflect on the growth and progress of our educational journey with students.



GUS is also an opportunity to see, firsthand, the connections between the scholarly and artistic interests of our community. Our students are addressing interesting problems that require a variety of intellectual and artistic approaches and through our educational partnership we all benefit profoundly.

Guilford is at the forefront. In recent years, many institutions have established interdisciplinarity as a goal for their academic programs. At Guilford the faculty and students have long embraced this partnership of inquiry and nowhere is this more evident than at GUS.

More than anything, GUS is a great reminder of the exceptional work underway in our community. Thank you for joining us today and celebrating what makes Guilford exceptional.

Best Regards,

Frank Boyd
Academic Dean

Imperfecto de Subjuntivo Video

Aarushi Ahuja, Margaret Brown
Spanish

Faculty sponsor: Karen Spira

Session: Spanish and German Panels
Location: Experimental Classroom • Time: 11:30-11:45 AM



Bridging the Gap: Art, Physics, and Photography

Hollis Akins
Art, Physics

Faculty sponsor: Don Smith

Session: Poster and Exhibition 3
Location: Main Level Poster and Exhibition Space • Time:
2:45-3:45 PM

It is categorically impossible for a photograph to truly and accurately depict the world. It is the job of the photographer to interpret the world through the photograph, whether that be from an artistic or scientific perspective. Both art and physics are ways of observing and interpreting the world, and the two disciplines come together through photography. My goal with this project was to balance the relationship between scientific and artistic photography, creating images of what our sky would look like if the solar system was arranged in different ways.

I have used the relative sizes and distances of objects in our solar system to determine what the sky would look like if the Moon were significantly closer to the Earth, or if the Earth orbited as a moon of Saturn or Jupiter. I have used the Guilford College observatory to take images of Saturn, Jupiter, and the Moon, combining them with other photographs to create the final products. I shot the images of the gas giants using only a telescope, and iPhone, and post-processing software, but captured the Moon on an old film camera, producing the final result using entirely analog methods. These “alternative skies” serve as a bridge between the scientific and the artistic, combining the orbital calculations and computer programming familiar to physicists with the principles and methods of artistic photography to create a result that is somewhere between the two.

Evolution of Antagonistic Anti-Metal Epistasis in Escherichia coli

Fidaa F Almuhaysh
Biology, Chemistry

Faculty sponsor: Melanie Lee-Brown • Project mentor: Joseph L. Graves

Session: Presentations 3
Location: IDEA Incubator • Time: 12:00-12:15 PM

Electing Jokes: Late Night Comedy, Political Knowledge, and Bitter Partisanship

Sharanya Ananth
Political Science, Psychology

Faculty sponsor: Richie Zweigenhaft

Session: Presentations 1
Location: IDEA Incubator • Time: 9:45-10:00 AM

In this presentation I examine the impact of late night comedy television shows upon elections and the greater political discourse. This topic for my paper and presentation was chosen due to the increased viewership of late night comedy during and following the 2016 presidential election. I look at ways that late night shows have, on some occasions, shaped perceptions of policy and politicians. Additionally, I discuss how many viewers receive a great deal of political rhetoric from these late night comedy shows and share both personal anecdotes and statistics regarding the issue of political knowledge based on a survey that I conducted of 56 individuals who ranged in age from 16 to 57. I also explore how late night comedy often reflects the culture around us, from expansion of programming to online formats to the representation of marginalized groups to overwhelming partisan attitudes. The findings indicate that late night comedy presents difficult political matters in a more palatable form and encourages political discourse.

Roller Derby in the Media

Jessica Barselow
Women's, Gender, and Sexuality Studies, Media Studies

Faculty sponsor: Richie Zweigenhaft

Session: Presentations 1
Location: IDEA Incubator • Time: 10:45-11:00 AM

Business Ethics Issues and Cases from IDS 402

Lauren Becker, Matt Bowen, Aswan Bland, Andrea Christian, Sarah Hammood, Julian Humes, Jose Lopez, Matt Lovett, Alex Martin, H'lois Mlo, Graham Pearson, Allie Ray, Joshua Shepherd, Austin Wilson
Business

Faculty sponsor: Betty Kane

Session: Business Ethics

Location: Art Gallery • Time: 10:00-11:15 AM

The IDS 402 Business Ethics class requires students to work in teams to choose an important business ethics issue, along with a case study to illustrate. The common theme that runs through our course is understanding the multiple relationships among the stakeholders, and the potential tensions and challenges created as organizations strive to make profits and meet their ethical obligations.

Lauren Becker, Matt Bowen, Aswan Bland: Pharmaceuticals, Merck and Opioid Addiction

The pharmaceutical industry provides a wealth of business ethics issues and illustrates the classic conflict between the desire for profits and the effects on consumers and other stakeholders. Many drugs have resulted in deleterious effects on society. Pharmaceutical companies exert influence in the marketplace. While physicians and patients are looking for medicines to move them toward wellness, pharmaceutical companies are driven to make profits. This team will look at marketing and advertising, the FDA approval process, and the prescription opioid epidemic.

Matt Lovett, Jose Lopez, H'Lois Mlo: Information Technology and Google

Like all society, business relies on technology, from phones to computers to other sophisticated devices. Alphabet, Inc., parent company of Google and YouTube, is one of the most influential technology companies in the world. The role of business ethics in the IT field is pervasive and includes such issues as protecting and securing data networks. The success of Google and other IT firms is directly impacted by how successfully they face challenges related to big data, intellectual property and employee privacy.

Allie Ray, Joshua Shepherd, Austin Wilson, Andrea Christian: Marketing, Advertising and Facebook

Effective marketing and advertising play a key role in enhancing customer experience and are critical for sales and profits of companies. Consumers are barraged constantly from everywhere, in many instances without being aware. Ethical issues arise due to how companies "push" their advertisements to specific people, and concerns about privacy, manipulation, and false and misleading advertising. Facebook's behavioral ad targeting practice provides examples.

Julian Humes, Sarah Hammood, Graham Pearson, Alex Martin: Globalization and Nestle

Globalization business ethics issues increase exponentially as businesses continue to seek global opportunities for production and marketing, in their attempts to remain competitive by increasing sales and reducing costs. Protection of human rights and the environment are important topics. Our team focused on legal, cultural, and accountability issues related to globalization. A recent case related to the supply chain for Nestle's "Fancy Feast" provides a framework.

Persistent organic pollutants in soil samples

Charles Bookheimer, Benjamin Levin

Biology, Environmental Studies

Faculty sponsor: Christine Stracey

Session: Poster and Exhibition 1

Location: Main Level Poster and Exhibition Space • Time: 11:30 AM-12:30 PM

Coal ash, the product of burning coal, is stored in large ponds and mounds because the toxic chemicals they contain, such as persistent organic pollutants and heavy metals, are harmful to human health. In the past, coal ash spills have introduced large quantities of toxic waste into the environment, however, this study will look into the potential leaching from stored coal ash. Our three sample sites are on private property just over a half mile west of the coal ash ponds and mounds. This is significant, as Duke Energy is required by North Carolina legislature to provide bottled water to anyone living within a half mile of a coal ash plant. Moreover, some citizens living near coal ash ponds, that have their own wells, are now being given this bottled water because their wells were found to have potentially harmful chemicals. Our soil and water samples will be run through an extraction technique using benzene, ethanol, hexane, and toluene as solvents and then analyzed using GC/MS. This context is important, as Forsyth county (where the power plant is located) and neighboring Guilford county have very high breast and prostate cancer rates. Future studies could look at the connection between the compounds found in the samples and those compounds carcinogenic effects, as well as their effects on humans.

Prey Handling Time of Birds of Prey

Reid Boyd

Biology

Faculty sponsor: Christine Stracey

Session: Poster and Exhibition 1

Location: Hege Library Terrace • Time: 1:30-2:30 PM

I will be studying the different prey handling times and behaviors of birds of prey. I will compare across species and sex, as I predict that mass will be the biggest factor in prey handling time, the larger the bird the less time they will spend with their food. I will have a poster presentation as well as live birds as real world examples.

Musical Performances

Connor Brady, John Hughes, Matt Lovett, Alfonso Mancheño, MaKayla McLaurin, Kyia O'Neal, Moe Reh, Troy Taylor, Brandon Walker, Alex Ward

Faculty sponsor: Kami Rowan

Session: Musical Performances

Location: Carnegie Room • Time: 1:30-2:30 PM

Moe Reh

Etude no. 12 by Heitor Villa-Lobos

Brandon Walker

In a Sentimental Mood by Duke Ellington, arr. J. Vieaux

Connor Brady and Brandon Walker

Suite Retratos: Pixinguinha by Redemès Ganattali (1908-1988)

Connor Brady, Matt Lovett, Moe Reh, Brandon Walker

Knots by Alan Shoesmith

I. Sailor's Hitch

II. Figure Eight

III. Ribbons and Bows

Around the World by Patrick Roux

I. Tango del Sol

- II. C-Ayre
- III. Amazon-E
- IV. Round for the World

Alex Ward

Revenant of the Swan by Alex Ward (Honors Thesis project)

Kyia O'Neal, harp

A Thousand Years by Christina Perri, arr. O'Neal

Alfonso Mancheño, John Hughes, Brandon Walker, Troy Taylor, and MaKayla McLaurin

All Blues by Miles Davis

Oleo by Sonny Rollins

Stolen Moments by Oliver Nelson

CNC Step

Community N Culture Step Team: Celene Warren, Jeremiah Hedrick, Juwan Houston, Alex Martin, Dwayne Duncan, Caleb Anderson, A'lexus Newkirk, Desmond Marshall, Kayla Scott, Montek Johnson, Toni Santos, Uroupaere Koripamo

African and African American Studies, Art

Faculty sponsor: Tim Johnson

Session: Community N Culture Step Team

Location: Carnegie Room • Time: 12:00-12:30 PM



Deep listening in the Grassroots: Community Building in Greensboro's District 2

Sarena Brown, Seleta Jaggernauth, Risuin Ksor

Community and Justice Studies

Faculty sponsor: Hollyce "Sherry" Giles

Session: Presentations 1

Location: IDEA Incubator • Time: 10:15-10:45 AM

The local non-profit, Beloved Community Center, feels that as a community, Greensboro has not been successful in guiding and nurturing the city's low-income youth and black and brown youth. Beloved has termed their approach to changing this culture, a "paradigm shift" (Pursuing a Neighborhood Paradigm Shift, 2017, p. 1). The organization believes that, in the public's eyes, this group of young people is looked at negatively, and the paradigm shift aims to change that perception. As part of this initiative, Beloved Community Center is recruiting, and training youth in organizing and for jobs through the Beloved Organizing, Training, and Healing Institute (BOTH). To support Beloved's efforts, Guilford College students in the Community & Justice Studies Capstone course are partnering with the organization and community researchers to help identify young people in Greensboro's District 2 to mobilize for BOTH. Drawing on a Participatory Action Research method, students and community members are doing individual interviews and focus groups with thirty District 2 residents. The purpose of the research and these conversations is to identify assets and needs in young people's neighborhoods, stimulate them to think critically about their community, and ways to address the issues they face, and engage their interest in BOTH. This presentation will highlight the preliminary findings of this project.

Reading by Dean's Writing Award Winners

Tibaria Alnouri, Caleb Anderson, Kathleen Herbst, Renate Keg, Emma Ross

Faculty sponsor: Parag Budhecha

Session: Presentations 2

Location: Experimental Classroom • Time: 10:15-11:00 AM

First-Year Writing: Renate Keg for "In Response to Bluets"

Scholarly/Critical Writing: Tibaria Alnouri for "Salam or Shalom: The Arab-Israeli Cleavage in the Black Freedom Struggle"

Writing in the Physical, Natural and Health Sciences: Caleb Anderson for "The Silver Bullet? Investigating the Oligodynamic Effect"

The Betty Place Prize in Poetry: Kathleen Herbst for "Munich to Merano," "A Letter to HD," and "Ode to the Tirolian Alps"

The Sue Keith Prize in Fiction: Emma Ross for "What the Old Man Did Not Recall"

Quality TRANSmision: A look at trans characters on TV and what makes "good" representation

Abby Carter

Psychology, Media/Communications

Faculty sponsor: Richie Zweigenhaft

Session: Presentations 8

Location: IDEA Incubator • Time: 4:15-4:30 PM

Media has a very powerful effect on people's perceptions. The way minority groups are represented in popular media impacts the the daily life of individuals within those groups, in a variety of ways. Through an analysis of nine TV shows, Sense8, Orange is the New Black, The OA, Transparent, The Fosters, Faking It, Shameless (US), Billions, and Doubt and the transgender character(s) in each of those shows, this research forms an idea of what is necessary for accurate representation of the transgender community, representation in general, and how to consider and consume "good" or "bad" media representation.

Drugs, Fashion, Sex, and Despair: An Adult's Struggle to Connect with *Alice*

Alice Croom

English, Women's, Gender, and Sexuality Studies

Faculty sponsor: Caroline McAlister

Session: Presentations 7

Location: Experimental Classroom • Time: 4:00-4:15 PM

Lewis Carroll's 1865 masterpiece *Alice's Adventures in Wonderland* seems to have an immortal life in endless forms making it a relevant piece of literature in 2018. The curious aspect of this is that Alice lives on most popularly in forms that Carroll could never imagine. Many of the most recent adaptations contain allusions to the life Charles Dodgson (the real name of Lewis Carroll) led, which included an obsession with young girls and their innocence. Music, movies, and runway collections, have claimed inspiration from these original characters and have interpreted them in ways that make the modern Carroll historian cringe with discomfort. Why then, we must ask, have adults used *Alice's Adventures in Wonderland* to help them express sexual, dark, and substance-related desires? Through an analysis of the company that modern-day Alice from Wonderland keeps, I will attempt to answer this question.



Stay or Leave: Living Conditions of Refugees and Immigrants in Greensboro

Hadis Daqiq

Community and Justice Studies,
Undergraduate Research with Bonner
Center

Faculty sponsor: ZhiHong Chen

Session: Presentations 4

Location: Art Gallery • Time: 11:45 AM-12:00 PM

Through small focus groups, with interpreter assistance as needed we better understood millennial awareness within refugee populations about Fair Housing Resources available through the Landlord Tenant Dispute program. Our proposed project attempted to tap into the 18-35 years age group, investigating to what degree they are aware of the Fair Housing Resources as well as what factors influence their decision to reside in or leave Greensboro. We assessed the program effectiveness by soliciting feedback on program use. We also assessed why residents choose to live in or would leave substandard housing, and what they believe their housing options are.

An important, powerful motive underlying this effort was for relatively recent arrived Asian-American community members (especially, refugee families from Bhutan and Nepal, Central Highlands of Vietnam and Burma) to share the question, “What do we have in common?” Based on responses from community partners, we believe this question must be openly pursued in order to deliver meaningful results to the residents while respecting, amplifying and reinforcing the work of community partners.

Critical and Creative Community Making in Action: The CUBE

THEA 250 class, Hank Groon, Ethan Anderson
Experience Design, Theatre Studies

Faculty sponsors: Meg Hinson & Tierney Steelberg

Session: The CUBE

Location: Makerspace • Time: 10 AM-4 PM



Check out the Makerspace in action on the lower level of Hege Library!

- Textile Room: THEA 250 students will be working on their final costume projects in the Textiles Room from 10 AM-4 PM - stop by and check out their work.
 - Recording Studio: The sky's the limit with our new green screen! Choose a fun background and come get your photo taken by Makerspace Intern Hank Groon between 1-4 PM.
 - Ideation Lab: Get a taste of Makerspace technology by playing a 2D ball game loaded onto a Raspberry Pi, created and facilitated by Technology Tutor Ethan Anderson from 1-4 PM.
-



"The Running Story" - Exploring story and creativity in sport

Sommer Fanney
Art, Creative Writing

Faculty sponsor: Mark Justad

Session: Poster and Exhibition 3
Location: Main Level Poster and Exhibition Space
• Time: 1:30-2:00 PM

Using photography and personal narrative through transcribed interview, Sommer Fanney mines for voice and narrative in the experiences retold by a variety of athletes. Presentation will include photographs of athletes in competition and in neutral poses, as well as excerpts from their experience. In addition, there will be discussion on establishing an artistic and expressive process within the environment of competition.

Education Inside-out: Planning Sustainable Construction in North Carolina

Kaeli Frank, Arraya Tull, Ziyar Oyefesobi
Art, Environmental Studies

Faculty sponsors: Holly Peterson & Mark Dixon

Session: Education Inside-Out
Location: The Quad • Time: 2:45-3:45 PM

Our presentation is part of a greater project through our Environmental Planning and Sculpture in the Environment classes to plan and design a prototype for an environmental classroom that could be built on Guilford's campus. Our group's research focuses on the structural building processes of indigenous communities from the North Carolina region. Our goal was to complete background research on less impactful materials and construction, build a model for creating a

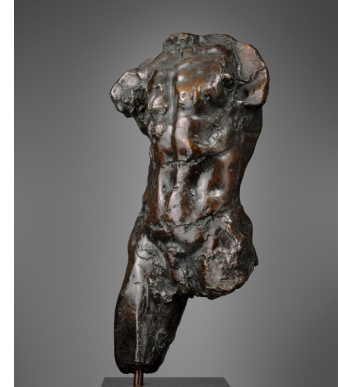
community-oriented, natural space at Guilford, and elaborating a plan to ensure its environmental sustainability.

The Sense of a Space in “Archaic Torso of Apollo,” by Rainer Maria Rilke.

Mei Fujie
Literature

Faculty sponsor: Eric Mortensen

Session: Presentations 7
Location: Experimental Classroom • Time: 4:15-4:30 PM



Rainer Maria Rilke is an Austrian Poet from the end of 19th to the early 20th. When readers read Rilke’s “Archaic Torso of Apollo,” they feel they exist the creative art world beyond their existing world. The poem plunges the readers into the pure and natural world of “mysterious entities” which Rilke experienced. “Archaic Torso of Apollo,” is his response to a torso carved by Auguste Rodin, the French sculptor. However, the poem does not merely explain the detail of the torso, but shares the inexpressible experience with the readers. His transcendence is to share his experience with readers, which is the idea of a space. One of Rilke’s ideas of a space relies on Nature, which Rodin also followed in his artwork. Besides, Rilke intentionally takes up a space between readers and his work, and he inevitably holds a space between his inner world and his terms. I will talk about these three ideas of Rilke’s space in “Archaic Torso of Apollo.”

Does the Risk of Later-Life Cognitive Deficit Lead Parents to Discourage Their Children from Playing Football?

Karen Fuquay
Psychology

Faculty sponsor: Richie Zweigenhaft

Session: Poster and Exhibition 1
Location: Main Level Poster and Exhibition Space • Time: 11:30 AM-12:30 PM

In recent years, studies have been conducted regarding the possible link between playing American football and later-life cognitive injury to the brain. These studies suggest that “Repetitive Head Impacts” and “Sports-Related Concussions” can lead to traumatic brain injury and these injuries may lead to Chronic Traumatic Encephalopathy (CTE). CTE is a “progressive neurodegeneration

associated with repetitive head impacts.” CTE causes behavior and mood problems in younger players and cognitive impairment in older players. CTE can only be confirmed postmortem. In light of the research and the recent media attention surrounding the subjects of concussions and CTE, I designed a study to explore the extent to which parents are concerned about the lasting impact of brain injuries on football players, and how this is compared to their concerns about their children playing soccer and skateboarding. In this presentation, I will discuss my research design, which looked at the three sports, the gender of the child, and the gender of the parent, and the age of the child, my results, and some implications.



Interactive Art Exhibition by Mixed Media and 2D Design

Cristina Gaviria, Emma Rice, Juju Holton, Jewel Biggs, Tay Bomstein, Ally Forchic, Abijah Gattis, Megan Kimpel, Annie Lattimore, Clare O'Connor, Madison Reynolds, Kayla Scott, Gloria Singleton-Kahn, Jonah Woodstock, Keenan Brough, McCaine Brandt, Abigail Cannon, Sachi Dely, Christian Duenas, Katie Farr, Eder Flores, Rex Green, Isabel Gutierrez, Julie Hildebrand, Margaret Larson, Katie McNeill, Malika Moore, James O'Bryant, Saul Rodriguez Arellanos, Gerard Seals, Robert Syrop, Lesly Vasquez, Juan Vigoya-Astroz, Ari Walker, and Lily Wieleba

Art

Faculty sponsors: Antoine Williams & Katy Collier

Session: Interactive Art Exhibition

Location: Carnegie Room • Time: 11 AM-3:30 PM

Black Women's Agency in U.S. Institutions: Navigating Tracking and Curriculum Design

Jocelyn Gesner
Sociology & Anthropology

Faculty sponsor: Naadiya Hasan

Session: Black Women's Agency in U.S. Institutions
Location: Art Gallery • Time: 4:30-4:45 PM

The education system is one of the many institutions in the United States that is set up to fail certain groups of people. This brief talk addresses the ways that black women attempt to use the education system to their own benefit, despite exclusionary practices such as educational tracking and curriculum development.

Is the Yellow Laser like Sodium?

Jeniffer Gonzalez Reyes
Physics

Faculty sponsor: Donald Smith • Project mentor: Thomas Espinola

Session: Presentations 3
Location: IDEA Incubator • Time: 11:45 AM-12:00 PM

Sodium lamps have been a part of our everyday lives for almost 100 years. The yellow-orange glow of urban skies at night comes from sodium street lamps. For us to perceive light as yellow, the wavelength of the light must be between 570-590 nm, but the wavelength of "true" yellow is the same as the sodium D-line, which measures 589 nm. Lasers only emit at one single wavelength, but until recently, colors beyond red, green, and blue have been prohibitively expensive. Yellow laser pointers claiming to emit at 589 nm are now selling for a few hundred dollars. Yellow lasers could become an option to replace harmful LED lights today and decrease the amount of light pollution in the United States and Europe. As yellow lasers become more affordable to the public, we can ask: how accurate are the claims of the laser manufacturers? Do they truly emit at 589 nm, matching the sodium D-line? I will report on an experiment to test the wavelength of the 589 nm DPSS Yellow Laser System F Series. This experiment is based on an article by James Lincoln: Introducing the yellow laser. If the wavelength of the laser matches that of sodium, laser light should be absorbed by sodium burning in a candle flame. I will compare the brightness of the yellow laser behind burning sodium with that of a red laser, which should show no absorption.

Identifying Interactions Between Plant Extracts as Antibiotics Against *S. aureus*

Anahita Gupta, Sophia Hazlett
Biology

Faculty sponsor: Michele Malotky

Session: Poster and Exhibition 2

Location: Main Level Poster and Exhibition Space • Time: 1:30-2:30 PM

Throughout history, people have utilized plants for their natural antibacterial properties. With the rising concern of bacterial resistance to antibiotics, it is essential that new antibiotics are produced to fight these resistant strains. This has caused an increased interest in utilizing chemicals derived from plants to synthesize novel antibiotics. Although individual plant extracts are able to combat bacteria, some appear to have stronger antibacterial effects if used in specific combinations. This led us to investigate potential synergistic interactions between extracts from four plants: Myrrh (*Commiphora myrrha*), Goldenseal (*Hydrastis canadensis*), Frankincense (*Boswellia papyrifera*), and Usnea. Each plant possesses components that inhibit bacterial growth through methods such as damaging bacterial membranes and blocking oxidative phosphorylation. Based on previous literature, we prepared combinations of extracts from these four plants and tested them against *Staphylococcus aureus*. We determined potential synergistic effects when the four plants were utilized; however, individual extracts were more effective than certain combinations, suggesting some potential antagonistic interactions as well. Further studies will need to be conducted to explore this possible synergism, as well as the effects of these mixtures against other bacterial species.

Race, Romance, and Media: Romantic Pairings and the Production of Hegemonic Whiteness in Glee

Rebecca Hamilton-Levi
Sociology & Anthropology

Faculty sponsor: Naadiya Hasan

Session: Poster and Exhibition 3

Location: Main Level Poster and Exhibition Space • Time: 2:45-3:45 PM

Romance and whiteness are two subjects that are both pervasive and normalized in mass media, particularly in the United States. At the same time, the narrative of being in a “post-racial” era is also thoroughly embedded in U.S. culture. This study examined the intersection of romance, race, and television to look at the production of racial power dynamics in media. The specific research question examined was: how do romantic couples in television shows that are regarded as

progressive reproduce hegemonic whiteness? This study was situated in three theoretical frameworks (Critical Discourse Analysis, Critical Race Theory, and Script Theory) to look at how power plays out in the media we consume. A content analysis of the television series *Glee* (2009-2015) was conducted to examine the interplay between color-blind racist framing (Bonilla-Silva 2003) and the Heterosexual Script (Kim et al. 2007). 177 instances of color-blind racism and 483 instances of the Heterosexual Script were found in the sample. Romantic pairings that included nonwhite characters often included racialized conversations while white/white romantic pairings rarely discussed race. These findings imply that while the race of nonwhite characters is often highlighted in romantic interactions, whiteness is normalized and invisible. This study helps to unveil the covert racism presented in “progressive” media, and contributes to the pre-existing dialogue surrounding hegemonic white supremacy in the United States.

Metal/Antibiotic Pleiotropy and Epistasis in *E.coli*.

Sarah Hammood

Biology

Faculty sponsor: Melani Lee Brown • Project mentor: Joseph L. Graves, Jr

Session: Presentations 5

Location: IDEA Incubator • Time: 2:00-2:15 PM

Heavy metals, such as silver (Ag), have been used as antimicrobial agents. In contrast, metals, such as iron (Fe) is essential for bacterial growth. We utilized experimental evolution to create 5 Fe³⁺-resistant populations of *Escherichia coli* K12MG1655. These cell lines/cells or strains exhibited superior growth in increasing concentrations of Fe³⁺ compared to controls. These resistant populations were also tested for resistance to traditional antibiotics (ampicillin, tetracycline, polymyxin B, rifampicin, and bacitracin) and showed superior growth at increasing concentrations of these antibiotics. Whole genome sequencing revealed genomic variants that contributed to Fe³⁺ resistance. Selective sweeps of de-novo mutations occurred in *fur* (ferric iron uptake regulator), *nusA* (transcription/anti-transcription terminator), *rhoA* (transcription terminator), and *fecA* (ferric citrate outer membrane transporter). This study examines whether fitness epistasis due to ferric iron genetic background impacts selection for ionic silver resistance and the correlated trait antibiotic resistance. Five Ag+Fe³⁺ cell lines were established. After selection, the AgFe³⁺ populations were tested for antibiotic resistance. It was shown that antibiotic resistance gained from Fe³⁺ mutations was lost after being selected for Ag⁺ resistance. We are preparing to sequence the Ag+Fe³⁺ populations to determine the genomic mutations associated with the loss of antibiotic resistance.

Hidden from the Headlines: Human Trafficking

Sophia Hazlett

Psychology, Mass Media Psychology (specifically)

Faculty sponsor: Richie Zweigenhaft

Session: Presentations 1

Location: Experimental Classroom • Time: 10:00-10:15 AM

The term mass media encompasses the diverse collection of mediums that are responsible for communicating information to the general public. In modern American culture, one such medium has become increasingly influential as a primary facet for information: online news outlets. These news outlets have the power to alter consumers' perspectives on prevalent global issues. One such issue, human trafficking, remains hidden from the headlines of mainstream American news media. In conjunction with poor coverage, the pressing global issue is displayed in a manner that is not suggestive of its prominence nor its complexity. As a result, the general public is left with dangerous misconceptions.

Sleep Paralysis and Lucid Dreaming

Brad Hennings

Psychology, Religious Studies

Faculty sponsor: Eric Mortensen

Session: Presentations 6

Location: IDEA Incubator • Time: 3:15-3:30 PM

This paper aims to examine the relationship between lucid dreaming and sleep paralysis. These phenomena are ostensibly related; they are both dissociative states entered into in the REM stage of sleep. Sleep paralysis is often entered into at the dissolution of a lucid dream; lucid dreams can be achieved from the grips of sleep paralysis. Yet, as anyone familiar with both of these states can attest, the experiences of these two phenomena are markedly different. The questions explored here are (1) what are the differences in predisposing factors for these two experiences?, (2) how are the effects they have on the dreamer different from one another? and (3) how can studying sleep paralysis and lucid dreaming in relation to one another help minimize the negative effects of these experiences while enhancing their benefits?

Principal Component Analysis of Mass Extinctions Using the Paleobiology Database

Michael Johnson

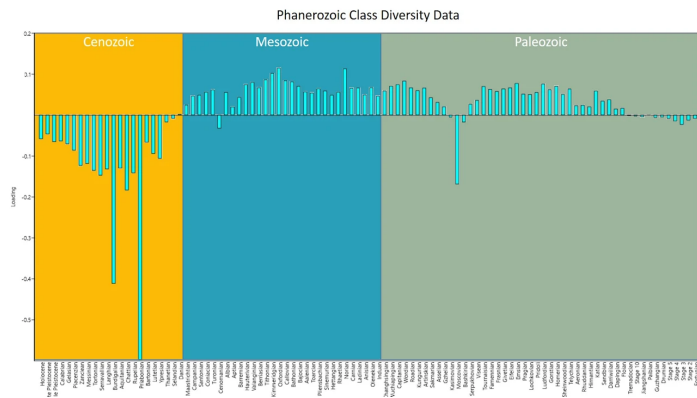
Geology

Faculty sponsor: David Dobson

Session: Presentations 5

Location: IDEA Incubator • Time:

2:15-2:30 PM



Mass extinctions are one of the most studied topics in paleontology. Paleontologists have identified five major mass extinctions, collectively known as the “Big Five.” This study used the statistical procedure principal component analysis to examine which organisms were susceptible to extinction and which taxa flourished following an extinction. It transforms a number of correlated variables into a smaller number of linearly uncorrelated variables called principal components. The raw data for this research was retrieved from the Paleobiology Database that contains information on origin, extinction, and diversity of many taxa at multiple time resolutions. The raw data was normalized and analyzed using statistical software PAST. The initial phase of research focused on organisms throughout the Phanerozoic to determine the best base taxon (phylum, class, or order) and temporal resolution to analyze the Big Five. Class-level analysis produced the clearest results, and stage-level resolution produced the most detailed findings. Following this phase, research focused on a series of trials with different groups of taxa, different focus on taxa that went extinct, that survived, or that originated, and different time spans. Initial results aligned with previous work on extinction and broad faunal groups. Further analyses revealed connections across taxa, some of which have easy explanations related to habitat, lifestyle, and global events, but others of which are unexpected.

Sexuality, Self-Esteem and Self-Care for Women of Color
Natalia Johnson, Celene Warren, Mikayla Jones, Imani Ames
MLSP

Faculty sponsor: Irving Zavaleta Jimenez

Session: Panel Discussion 1
Location: Main Level Presentation Space • Time: 1:30-2:00 PM

A discourse for Women of color by Women of color. It will uplift, strengthen and function as an enlightening space to talk about sexuality, self-esteem, and self care for women of color.

Effect of temperature changes in the synthesis of fluorescent conjugated polymers
Leanna Kantt
Chemistry

Faculty sponsor: Rob Whitnell

Session: Poster and Exhibition 2
Location: Main Level Poster and Exhibition Space • Time: 1:30-2:30 PM

Fluorescent conjugated organic polymers have a variety of applications including detection of explosive and biological analytes as well as organic photovoltaics and the fabrication of organic light-emitting diodes. With such an array of uses, these polymers are ideal for research. However, the synthesis of the polymers is air and moisture sensitive, requiring the use of a glovebox to create a rigorous inert and anhydrous atmosphere. Mako and Levine (1) suggest a straightforward synthesis via the Gilch Polymerization that can be done using standard inert atmosphere techniques without a glovebox. The polymer formed can be used to produce fluorescent nanoparticles and thin films. These products can further be utilized for biological and chemical applications including drug delivery tagging and fluorescent chromatography. Our research involved exploring how the temperature at which the synthesis was performed affected the resulting polymer. Based on reactions done over a temperature range of -70°C to 5°C, we describe the changes in physical and spectroscopic properties observed in the synthesized polymers.

Moving Towards Internal Authenticity: Religious Tourism, Journey Narratives, and SBNRs

Anna Kelly
Religious Studies

Faculty sponsor: Jill Peterfeso

Session: Presentations 6

Location: IDEA Incubator • Time: 3:00-3:15 PM



In their “About Me” section, a tour company called Sacred Earth Journeys declares, “Now is the time to set forth on an adventure of self-discovery at one of the world’s most powerful sacred sites. Where will your journey take you?” In this presentation, I will be sharing one section of my senior thesis research, which investigates religious tourism and the Spiritual, but Not Religious (SBNR) movement as facets of the modern American religious climate, showing the ways in which religious tourism offers a practical application of SBNR performance and how inversely the SBNR movement offers a theoretical method of analysis for religious tourism. In this abridged version, I will demonstrate the ways which these two phenomena rely on journey narratives, in both physical and spiritual manifestations, which remain firmly rooted in traditional pilgrimage rhetoric. I argue that by shifting to an individualistic evaluative mechanism, scholars can more accurately analyze religious tourism as a form of religious practice, rather than simply a niche market within the general tourism sector.



The Effects of Centralized Boarding Schools on Tibetan Families in Shangri-la

Anna Kelly, Billie Dunn-McMartin,
Christopher Collins
International Studies, Religious Studies

Faculty sponsor: Eric Mortensen

Session: Poster and Exhibition 1

Location: Main Level Poster and Exhibition
Space • Time: 11:30 AM-12:30 PM

This project is the culmination of the AsiaNetwork Student-Faculty Fellows grant, which contributed \$20,000 toward a month-long fieldwork trip to Southwest China. Our project tells the

stories of students and their families' experiences with mandatory, centralized state boarding schools in Shangri-la (Chinese: 香格里拉, Tibetan: Gyalthang). The core themes of our project include the trials faced by familial separation due to obligatory boarding at centralized schools, students' perspectives on their experiences in these schools, and the effects school centralization has on local Gyalthangpa Tibetan identity. We also seek to understand how ethnic traditions and language use affect the lives of our interviewees in light of the changing contexts of education. Although we were based in the town of Shangri-la, through fieldwork visits to schools and villages throughout the county, we learned from teachers, students, school administrators, and rural parents about their perspectives and experiences with this new educational system.

Silencing ribB in *Klebsiella pneumoniae* using the CRISPR/Cas9 System: Exploring a Potential Antimicrobial Target

Darby Kozan
Biology

Faculty sponsor: Melanie Lee-Brown

Session: Poster and Exhibition 3

Location: Main Level Poster and Exhibition Space • Time: 2:45-3:45 PM

Antibiotic resistant bacteria increase the prevalence of hospital acquired bacterial infections. Nosocomial infections resulting from antibiotic resistant bacteria compromise patient health and recovery, and prolong hospital stays. *Klebsiella pneumoniae* is multi-drug resistant and commonly found in the clinical setting that causes a range of respiratory and urinary tract infections in immunocompromised patients. A potential target for the design of new antimicrobials are gene-controlling riboswitches, such as the FMN riboswitch located upstream of the gene ribB. FMN is a hydrogen carrier in the electron transport chain and is produced from riboflavin. RibB, 3,4-dihydroxy-2-butanon-4-phosphate synthase, catalyzes the synthesis of riboflavin in the convergence of the purine and pentose-phosphate biosynthetic pathways. This study is investigating the survival of ribB silenced *K. pneumoniae* on exogenous riboflavin both in vitro and in vivo in *Caenorhabditis elegans*. The translational start site and ribosome-binding sequence for ribB was identified in *K. pneumoniae*, and a guide RNA for the CRISPR/Cas9 system targeting RibB was designed with the intent to interfere with the production of the enzyme. The CRISPR plasmid containing the ribB guide sequence, and the Cas9 plasmid were transformed into *K. pneumoniae*. The ability or inability of *K. pneumoniae* to uptake riboflavin exogenously will signal the efficacy of the FMN riboswitch as a potential, new antimicrobial target.

Are you afraid? Testing our world through the eyes of a bioterrorist

Mia Kulshreshtha, Adyazbeth Barrientos Solis,
Berenice Fuentes-Juarez, Rashaad Bracley,
Jeremy Brown, Henry Bumgardner, Holly
Gilliam, Brooklyn Hopkins, Alisher McMahan,
Mariame Meite, Cathy Nguyen, Gracie
Perry-Garnette, Bryce Smith, Mohamed Togol,
Maya Walfall
Biology

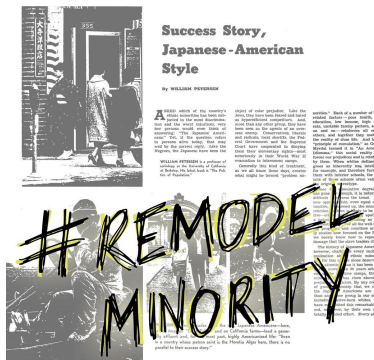
Faculty sponsor: Melanie Lee-Brown



Session: Bioterrorism

Location: Art Gallery • Time: 1:30-2:30 PM

Bioterrorism is the intentional use of biological agents or biologically derived agents against individuals or property in an attempt to coerce or intimidate governments or societies to achieve political, religious or ideological objectives. Dissemination is the intentional spread of biological agents through air, water, food, inanimate objects or direct injection. For Biology 291- Scientific Inquiry: Bioterrorism, research teams were asked to study weaknesses in our society that could be potential targets for bioterrorism and design dissemination experiments. We used *Bacillus thuringiensis* spores as a safe alternative for *Bacillus anthracis*, the causative agent of anthrax, a category A disease. Four groups conducted research into spore survival on food, dissemination at public events, and removal of spores by air filters. Methods included: applying spores to lemon and cantaloupe to determine spore/vegetative cell survival over time, studying the spread pattern of spores using a scaled model to simulate the release of contaminated confetti at a large-scale event, investigating spore contamination of tyvek wristbands and cutaneous transfer efficiency, and determining the spore trap efficiency of medium HVAC and surface loading filters using an air duct model. In this session we will be discussing the results of our studies and societal implications.



Making Connections: Model Minority and Do the Right Thing

Nima Lama

FYS: Histories and Stories of Race

Faculty sponsor: Karen Spira

Session: Presentations 1

Location: IDEA Incubator • Time: 11:00-11:15 AM

The histories and stories of Asian Americans and the consequence of their Model Minority identity will be traced through a scene between the Korean American store owner and the African American residents of Bed-Stuy in the movie, *Do the Right Thing*. Asian Americans are underrepresented in their views and struggle due to the misconception fostered by the Model Minority stereotype when in reality it's evident that Asian Americans are also going through similar dilemmas as faced by other minorities.

Black Women's Agency in U.S. Institutions: Shaping Society through the Television Industry

Eddi Kristina Lee-Barger

Sociology & Anthropology

Faculty sponsor: Naadiya Hasan

Session: Black Women's Agency in U.S. Institutions

Location: Art Gallery • Time: 4:45-5:00 PM

My presentation is focused on black women in the television industry by analyzing their active participation and agency within the television industry. The television industry is massive part of the social institution of mass media that greatly shapes our everyday lives. The television industry is large part of how Americans get their news and entertainment. We cannot fully understand television as an industry that influences society without examining the work that black women are doing in it. Black women are actively shaping the television industry through behind the scenes work and on stage work. They are contributing to the way the industry runs and what it produces. It is important to understand how their position as a racialized and gendered minority within the television industry and society affects an industry that so heavily influences society.

The Greenleaf Review: A Reading

The Greenleaf Review
English

Faculty sponsor: Mylene Dressler

Session: Readings

Location: Art Gallery • Time: 2:45-3:30 PM

Our event will consist of writers who are featured in this year's edition of the magazine reading their work in front of an audience. The event will serve as a precursor for the printed magazine, which will be released on April 22. It is also a great way to showcase our Community's wonderful, talented creative writers that contribute to our publication.

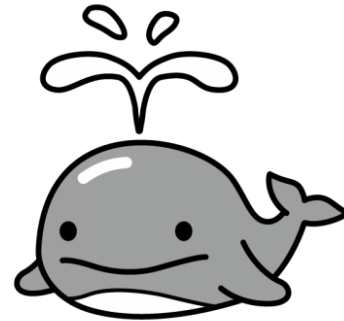
Conservation Significance of Scientific Whaling in Japan

Rosie Magura
Biology

Faculty sponsor: Christine Stracey Richard

Session: Presentations 3

Location: IDEA Incubator • Time: 11:30-11:45 AM



Whaling stands out as one of the most controversial and emotionally charged environmental issues today, due to heated moral debates and conservation concerns. The ethical and cultural complexities surrounding this issue are essential to understanding the issue, but this project focuses on the scientific side of Japan's whaling. Drawing from a variety of scientific literature sources, this project addresses the significance of molecular testing, the necessity of lethal sampling, and other aspects of Japan's scientific whaling projects.



The Effect of Seasonal Phases on an Athlete's Sport Commitment

Kelly Martin

Exercise & Sport Sciences, Health Sciences

Faculty sponsors: Lavon Williams & Craig Eilbacher

Session: Poster and Exhibition 3
Location: Main Level Poster and Exhibition Space • Time: 2:45-3:45 PM

The purpose of this study was to explore the nature of sport commitment and potential variations in an athlete's seasonal phases. Although much research exists on sport commitment measured in a static condition among athletes in a variety of categorical variables, there is little research that shows commitment as a dynamic construct (Scanlan, 1993; Scanlan & Carpenter, 1998). The nature of sport commitment is divided into a functional and obligatory component: enthusiastic and constrained commitment (Scanlan, et. al., 2015). To determine the degree of which an individual is committed is enthusiastic or constrained Scanlan and colleagues have attributed different types of influential constructs to each component. Enthusiastic Commitment is influenced by the following constructs: Sport Enjoyment, Valuable Opportunities, Personal Investments, Social Support, Desire to Excel and Social Constraints (Scanlan, et. al., 2015). The sole construct that influenced constrained commitment is Other Priorities. Division III male and female athletes from a variety of sports volunteered to complete a survey regarding sport commitment. Athletes were sampled in a cross-sectional design to explore sport commitment at varying seasonal phases: 1) pre-season, 2) in-season, 3) post-season. A one-way ANOVA was used to examine within and between group differences for overall and individual constructs of sport commitment by seasonal phase.

The Intersection of Beethoven's mind, life, and music - Exemplified through his F Minor Sonata, Op. 2, No. 1

Sophie McDowell

Music

Faculty sponsor: Kami Rowan • Project mentor: Tim Lindeman

Session: Poster and Exhibition 2
Location: Main Level Poster and Exhibition Space • Time: 1:30-2:30 PM



How do you separate the artist from their art? Ludwig von Beethoven is irrevocably intertwined with his music. His music became the only means through which he could share his life, his emotions, and his beliefs and though he faced criticism, music was a world in which he could not be judged or confined. His music was his own personal statement; it was a canvas on which he could explore his inner self. Even when he served under powerful aristocrats or was a pupil of prolific composers and musicians, Beethoven still asserted his own creative independence. In letters, Beethoven described his practice of trying to discover the inner meaning of his own art while grappling with the fact that it's meaning will always be just beyond his reach, living forever just beyond the stars. His yearning and pursuit of the unattainable is present though out Beethoven's life but is first established in the first movement of his first sonata, (F minor Sonata, Op.2 No. 1). His first sonata marks the beginning of his search for transcendence, and musical motifs and themes within the first movement are representative of his unrest to find what lies beyond the stars. Through my musical analysis of his first sonata and through the research I have done on his life, I wish to uncover Beethoven's motivations for his expression within his music and how his yearning to find deeper meaning was affected by his life circumstances and by the genius of his own mind.

Bonner Senior Presentations

H'Lois Mlo, Risuin Ksor, Jose Bernal Munoz
Bonner Center for Community Service and Learning

Faculty sponsor: James Shields • Project mentor: Audrey Mangili

Session: Bonner Senior Presentations

Location: Main Level Presentation Space • Time: 12:00-12:30 PM

H'lois: I am the first person from my family to go to college the encouragement from my two Montagnard refugee parents (the indigenous people of Central Vietnam) from the Ede tribe. I am a community activist working with community members who often need help in the basics of understanding American life, like learning to speak and read English. I have been involved in many projects to empower refugee, immigrant and minority youth that reflect the principles and values I learned from Guilford and the Bonner program.

Jose: Jose's presentation will discuss the work he has done in the realms of immigration policy and rights development, including his internship with American Friends Service Committee and as the Immigrant Assistance and Resource Center Program Manager at FaithAction International House. Using his experiences as a Bonner Scholar and in working directly with the local immigrant and refugee communities, Jose will shed light onto the stark reality many immigrants and refugees

have to endure locally and nationally. He will also explore the importance of advocating and serving immigrant and refugee communities. Jose will draw upon his advocacy work for immigrant rights and overseeing the daily needs of the Immigrant Assistance Center, and the services he provides through case management to help clients with food, housing, healthcare, detention and deportation guidance, domestic violence assistance, as well as employment readiness needs and teaching ESOL classes.

"Standing on Ceremony: The Gay Marriage Plays"

Tabitha Mocherman, Mariana Silva-Posada, Ally Thring, Laura Navey, Madison Stranhan, Brandon Jones, Sonia McLamb, Max Shumate, Sarah Mahlke, Alex Conkright, Anna Fox, McKayla Clark, Noah Lindberg, Cassidy Snow, Evelyn Amick, Madison Pointer, Jeremy Toda-Ambaras
Theatre Studies

Faculty sponsor: Robin Vest

Session: Theatre Studies Production

Location: Sternberger Auditorium • Time: 5:00-6:00 PM

In departmental productions, students apply techniques learned in the classroom to the creative problem solving involved in designing, rehearsing, marketing and presenting a fully realized production to the community. Each project is a collaboration of dozens of students working with faculty guidance in many areas. Research for each production involves extensive study of the "world of the play"; study of the given circumstances provided by the playwright; script analysis; and identification and pursuit of the purposeful transaction in which the production hopes to involve its audience. In "Standing on Ceremony: The Gay Marriage Plays", an A-list line-up of writers offers unique takes on the moments before, during, and after "I do." Witty, warm, and occasionally wacky, these plays are vows to the blessings of equality, the universal challenges of relationships, and the often hilarious power of love. By addressing such an important part of our society, "Standing on Ceremony" indeed proves that theatre has the ability to unite a community in a shared experience that can promote understanding and prompt change. In addition to performing these plays at Guilford College, the Department of Theatre Studies will be taking these plays to the Edinburgh Fringe Festival in Scotland over the summer to perform.

Fidel Castro y el movimiento 26 de julio

Andrew Orchowsky, Joseph Patterson

Spanish

Faculty sponsor: Karen Spira

Session: Spanish and German Panels

Location: Experimental Classroom • Time: 11:15-11:30 AM

Fidel Castro was one of the most influential figures of the 20th century. A controversial figure around the world, Castro was seen by some as a hero who was able to stand up to the United States, and by others an evil villain whose heinous acts against his own people have caused him to go down in history as totally despicable. In this VoiceThread presentation, Joseph Patterson and Andrew Orchowsky will present the story of the 26th of July Movement and Castro's rise to power. This story is one of trials and tribulations; through the sheer perseverance and determination that Castro possessed, he was able to take control of Cuba, and, in doing so, change his country and the world forever.

Modifying the Harmonic Kicker Radio Frequency Cavity for the Jefferson Lab Electron-Ion Collider

Sarah Ann Overstreet

Physics

Faculty sponsor: Thom Espinola • Project mentor: Haipeng Wang

Session: Poster and Exhibition 3

Location: Main Level Poster and Exhibition Space • Time: 2:45-3:45 PM



Don't Look at Me
Nara Seymour



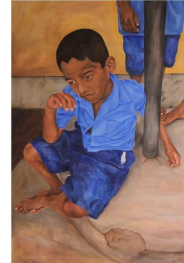
Deer Skull Cup
Caroline Ingram



Woman Contemplating Freedom
Terri Jones



Sunrise
James "Tank" O'Bryant



Considering the Nature of Childhood
Emily Zegel



What Moves Between
Elena Sippel

Things Not Seen

2018 Senior Thesis Art Exhibition

Opening Reception
April 20, 2018 7-9 p.m.

Bauman Galleries, Founders Hall
Guilford College
Free and Open to the Public / Info: 336-316-2301



Slowly Drawn to Classical Music
Christopher Perez

Things Not Seen: Artist Panel

Christopher Perez, Nara Seymour, Terri Jones, Elena Sippel, Emily Zegel, Caroline Ingram, James O'Bryant
Art

Faculty sponsor: Roy Nydorf

Session: Art Thesis Presentations

Location: Experimental Classroom • Time: 1:30-3:30 PM

Every year, the senior art students are given the opportunity to test their independent art crafting and exhibition skills in a professional yet supervised setting. These students, who have spent the past year honing their practice, are gearing up to showcase their work at this year's Art Thesis Exhibition. This panel will offer profound insight into their creative process, the intent behind their work, and their experience as art students at Guilford. The audience will also have the opportunity to ask questions about the nature of their work. Be sure to come visit "Things Not Seen" the Art Thesis Exhibition, showcasing April 20th, 2018 from 7-9pm.

Excerpts: Life and College through Composition and Recording

Eli Phillips

Music

Faculty sponsor: Kami Rowan

Session: Presentations 7

Location: Experimental Classroom • Time: 4:30-4:45 PM

This presentation will highlight my experiences writing and recording my own album. This project also serves as my senior thesis for the Guilford College Honors Program. I will explain the methodology behind my work and give a brief demonstration of a few features on Logic Pro X, the software I used to record and produce this music. I will speak to my process concerning both writing and recording original songs. I will also compare the process of working alone to my time collaborating with others, both within this project and in other musical endeavors. Lastly, I will discuss my imminent plans for this album as well as my future writing and recording goals.

H-alpha: Star Formation and Otherworldly Life

Connor Potts

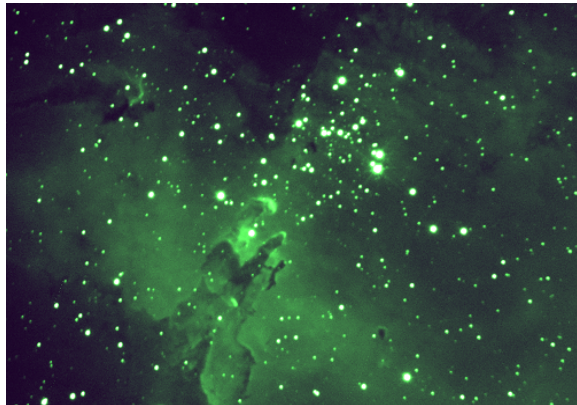
Art, Physics

Faculty sponsor: Don Smith

Session: Poster and Exhibition 3

Location: Main Level Poster and Exhibition

Space • Time: 2:45-3:45 PM



Astrophotography is something that many people don't know much about by name, but everybody is always interested in. I am making an astrophotography book of deep sky objects, complete with both pictures and information. Deep sky objects are noticeable objects in space, such as gas clouds and galaxies, that are not in our solar system. Using different techniques, I am able to recognize and see areas in these deep sky objects where there is star forming activity. This is neat, because we can look at how we were created. Then, we can compare the creation of us to what is happening in other star forming places. We can explore the possibility that, among other things, life was created out of this massive amount of elemental creation. Aliens and otherworldly life are strongly talked about in astronomy, because out of the whole universe, Earth cannot be the only thing that is allowing life form to survive.



Unbarred: Exploring the Role of Jailhouse Lawyers in Freeing the Wrongfully Convicted

Travis Poulos
Criminal Justice

Faculty sponsor: Catherine Bonventre

Session: Presentations 4
Location: Art Gallery • Time: 11:30-11:45 AM

Mumia Abu Jamal once wrote that law practiced in jail is "law written with stubs of pencils...law learned in a stew of bitterness, under the constant threat of violence, in places where millions of people live, but millions of others wish to ignore or forget" (2009, p. 32). This presentation will focus on jailhouse lawyers, prisoners who learn the law while incarcerated with hopes of getting or giving others around them a second chance. The talk will begin with a brief explanation of what a jailhouse lawyer is, while also looking at the process of becoming a jailhouse lawyer and why jailhouse lawyers are necessary and important in the criminal justice system. Following the explanation, the topic will shift focus to the role that jailhouse lawyers play in freeing individuals who have been convicted and incarcerated for a crime that they did not commit. The National Registry of Exonerations along with other news databases provide several cases of exonerations that were obtained with the help of jailhouse lawyers. Through a content analysis of news reports, National Registry of Exoneration case files, and legal decisions, this presentation will examine the nature and extent of efforts by pro se innocent inmates and jailhouse lawyers in contributing to the exonerations of wrongfully convicted prisoners.

Every Campus a Refuge Project

Lakshmi Premysler, Amelia Wellman, Caitlyn Councilman, Casey Graziosi, Kathleen Herbst, Jedidiah Edwards
Every Campus A Refuge

Faculty sponsor: Diya Abdo

Session: Every Campus a Refuge
Location: Main Level Presentation Space • Time: 2:45-4:00 PM

Students in the ECAR minor will talk about the projects they undertook this semester to support refugee resettlement in Greensboro and the ECAR program.

Education Inside-Out: A Closer Community

Kerry Reeves, Katie Melvin, Samantha Brown, Carolyn Worley
Education Studies, Environmental Studies

Faculty sponsors: Holly Peterson & Mark Dixon

Session: Education Inside-Out
Location: The Quad • Time: 2:45-3:45 PM

Our project combines environmental planning and art to focus in on a major issue on Guilford's campus. Guilford lacks an outdoor community learning space for students to free themselves from the box we are taught to think in with our education. The environmental planners are bringing in what they have learned about how to plan human life around nature and the sculptors are bringing the vision to life with a model for the what the outdoor community and learning space.

A Photograph at a Time: The Impact of Photography on America's Social Reforms and Its Wars

Ridge Ren
Psychology

Faculty sponsor: Richie Zweigenhaft

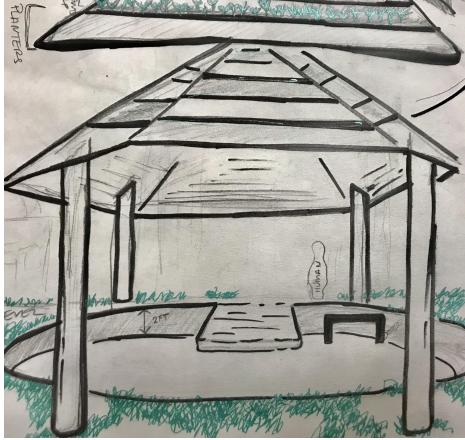
Session: Presentations 4
Location: Art Gallery • Time: 12:00-12:15 PM



First enabled for mass production by William Henry Fox Talbot's development of negative form printing, photography has since become a staple in newspapers. Often accompanied with articles to explain a phenomenon or demonstrate an idea, photography serves a crucial role in how the news is conveyed. As a standalone medium, photography can recreate a scene with little to no context, what Neil Postman called "a particular fragment of the here-and-now" in *Amusing Ourselves to Death*. Of course, the context in which a photograph was taken gives it historical relevance and a target towards which the audience can direct their emotions. However, written discourse alone cannot duplicate the efficiency of photography in conveying raw emotions. Throughout the 20th century, journalists utilized the camera to document the various internal and external struggles America faced. From the Great Depression to the Vietnam War, photography has prevailed as an iconic medium for reflecting the public sentiment and contributing to citizens urging the government towards change.

This presentation focuses on five notable photographs from American history and analyze their

historical contexts and lasting impressions. The presentation also discusses the nature of photography as a medium and its impact.



Education Inside-Out : Sustainability, Accessibility, and Education

Emma Rice, MaKayla McLaurin, Carter MacLeod,
Tim McElroy
Art, Environmental Studies

Faculty sponsors: Holly Peterson & Mark Dixon

Session: Education Inside-Out
Location: The Quad • Time: 2:45-3:45 PM

Our presentation is a creative collaboration between Environmental Planning and Environmental Sculpture. Our group brought together these two disciplines to compose both research and design plans for a hypothetical future outdoor classroom for Guilford College. We used research methods from the Environmental Planning IDS such as PAR (Participatory Action Research), and Environmental Sculpture artists and skills covered in the Sculpture and the Environment Course, to help develop and inspire our plans for an outdoor classroom. Our outdoor classroom plans were focused on creating something that would positively impact our community through sustainability, accessibility, and education.

Bonner Senior Presentations: Hector Suarez, Sav Dew, and Jamie Skjoldager

Hector Suarez, Sav Dew, Jamie Skjoldager
Bonner Center for Community Service and Learning

Faculty sponsor: James Shields • Project mentor: Audrey Mangili

Session: Bonner Senior Presentations
Location: Main Level Presentation Space • Time: 11:30 AM-12:00 PM

Hector: How are you able to work under societal expectations? My name is Hector Rivera Suarez, and today I will be presenting a culmination of the work that I have done the past three years at Guilford College. This work will range from the service that I have done through Bonner, to the service that I have done to impact my community here on campus. It wasn't always easy when you constantly hear microaggressions, but nonetheless it is possible. I will talk about how that was possible for me.

Jamie: This presentation will look at the importance of service-learning in an academic setting. After describing her work at Ashton Woods tutoring, Mobile Market, and youth leadership and diversity organizations, Jamie will share her experience of facilitating trusting and open environments within the stress of everyday life. Jamie will discuss the larger oppressive contexts in which these communities resist, share personal challenges, and discuss why this work is necessary.

Sav: Working with New Communion over the last 2 years, I have seen what separates beneficial community engagement practices from toxic acts of charity. To understand the difference, the first step is acknowledging we cannot just “serve” communities as a good deed or show of character. The second step is knowing that there are no quick fixes. To address issues associated with food insecurity, you must understand these issues are systemically rooted and will take time to solve.

Interracial Relationships: Video and Discussion

Ronald Romero, Yahel Flores, Fernando Jimenez, Rebecca Hamilton-Levi
Multicultural

Faculty sponsor: Irving Zavaleta Jimenez

Session: Video Presentation

Location: Hub 2 • Time: 11:30 AM-12:30 PM

The topic of interracial relationships is something we wanted to explore. We are creating a video/documentary to get different perspectives in the community to talk about the subject. We want to see what their perceptions are and if there is any tension in being in an interracial relationship, with the influences of social media, the political atmosphere, racism, and the freshness of the legality of interracial marriages, which was only 51 years ago. Following the video we will have a panel to create a discourse with the audience and get their perspectives on the topic and to get people thinking and hopefully carry with them.

Food Security at Guilford College

Addison Ronis (PECS 350 Class Panel), Tessa Young, Sierra Mendez-Neff, Amelia Wellman, Ginger Mandel, Dyamond Jefferies Kerr, Tay Bomstein
Peace & Conflict Studies, Sustainable Food Systems

Faculty sponsor: Zulfiya Tursunova

Session: Presentations 5
Location: IDEA Incubator • Time: 1:30-2:00 PM

This student panel discussion will address our research regarding food accessibility at Guilford College. We have conducted several focus groups, sampling a variety of Guilford College students, as a part of PECS/SFS 350: Food Justice, Sovereignty, and Peace. We have come to have an understanding of some of the systemic food issues that exist on this campus and have gathered a number of potential actions to be made in order to address these issues. After conducting this research, we also have grasped the sheer urgency for change on this campus. Our food system is reflective of our sense of community, inclusivity, accessibility, and sustainability. As Guilford College continues to strive for these values, it is imperative for us to be critical of our food system in order to drive positive change.

The Life of an Immigrant

Grace Sanabria, Jemima Adisa, Jed Edwards
International Studies, Political Science

Faculty sponsor: Irving Zavaleta Jimenez

Session: Poster and Exhibition 3
Location: Hub 2 • Time: 1:30-2:30 PM

Cultural Identity in Children's Literature: The Story of Marisol

Dafne Sanchez Aguirre

Community and Justice Studies, Spanish

Faculty sponsor: Alfonso Abad Mancheño

Session: Spanish and German Panels

Location: Experimental Classroom • Time: 12:30-12:45 PM



How does children's literature address cultural identity? This presentation looks at various examples and presents my own attempt at writing and illustrating a bilingual children's book that positively addresses cultural and racial identity.

Identity Exploration

Brandon Sapp, Colin Ganges, Lesly Vasquez, Precious Adisa, Maya Price

Multicultural Leadership Scholars Program

Faculty sponsor: Irving Zavaleta Jimenez

Session: Panel Discussion 1

Location: Main Level Presentation Space • Time: 2:00-2:30 PM

We are doing a presentation to highlight the different aspects of life people face due to different identities. Too often we do not realize the privileges we have because our society is designed in a way so that those with privilege are not taught about what others face. In this presentation we will have people think about the different aspects of their identities and how they both benefit and suffer from each of them.



Explorations in Local, Seasonal Cooking

Madison Shankin, Reid Boyd
Sustainable Food Systems

Faculty sponsor: Marlene McCauley

Session: Poster and Exhibition 1

Location: Main Level Poster and Exhibition Space • Time: 11:30 AM-12:30 PM

Often, local food is the most reliable source of sustainably grown nutrition. Eating locally is the same as eating seasonally, and this requires some skill. In the winter especially, when produce is scarce, it's important to know how to utilize what little is available. During the colder months, most of what is purchasable is squash and greens. Most people can throw together a salad, but not as many people know how to cook up a butternut squash.

Our class was focused on creating dishes that were as local and sustainable as possible, using produce mainly from the Guilford farm and the Farmers curb market on Yanceyville Road. We cooked dishes like omelettes, sweet potato soup, and gnocchi, with all of the main ingredients coming from local farmers. Reid and I will be reproducing two other foods we created; sourdough bread with rosemary and spinach mushroom risotto. While many of the ingredients for the bread are not local (such as the flour and salt) the yeast is wild and the rosemary is from the Greensboro Children's Museum. The sourdough starter itself was created in the lab, in the basement of Frank science center. For the risotto, the butter, spinach, and mushrooms will all be locally and sustainably grown. The broth used in the risotto will also be homemade, from the leftover bits of local vegetables.

Implications of Gendered Perceptions of Facial Features

Finn Shepherd, Hayden Young, Rachel Chmelko
Psychology, Women's, Gender, and Sexuality Studies

Faculty sponsor: Eva Lawrence

Session: Presentations 8

Location: IDEA Incubator • Time: 4:00-4:15 PM



Perceptions of facial features can affect individuals in numerous facets. Previous research has failed to appropriately examine these perceptions in relation to non-binary people, as well as the aspects of facial features related to gender ambiguity and androgyny. The current study examined

participant ratings of four faces with round or angular cheekbones and jawlines as masculine and feminine, as well as which feature combinations would be coded as non-binary, male, or female. Our analyses showed that round jawlines resulted in high ratings of femininity and gender coding as female. Other facial features did not result in significant effects on ratings of masculinity or femininity or on coding gender. Because gender perceptions can be associated with facial features, specifically a round jawline, individuals who have these features and identify as non-binary may be affected by these perceptions in multiple dimensions of their lives, including in the Guilford College community.

Ineffective Protection

Gloria Singleton-Kahn

Art

Faculty sponsor: Antoine Williams

Session: Poster and Exhibition 1

Location: Main Level Poster and Exhibition Space • Time: 11:30 AM-12:30 PM

Ineffective Protection is a room built to represent the difficulty of finding space to process harm done within institutional buildings. I used blues, greens, and yellows to support the soothing of pains and energizing of hopes. The space is meant to allow people who enter it to think about how they can nourish and grow themselves together within larger institutions. The walls are made of fabric to challenge the idea of what a secure space is, and how privacy can become the definition of security, even though full isolation blocks growth. Fabric holds intimacy because of how we wear and sleep with it. It can be defensive against feelings of insecurity by grounding the body. This soft and breathable room made of a semi-protective fabric walls, is a space in which people can experience a small increase in security to allow vulnerability to be shown.

While researching contemporary installation artists, I saw Yin Xiuzhen's installations of giant organs made of metal frames, covered with sewn together pieces of clothing. Her work welcomes introspection and validates the insights of her audience, because they are advancing her work by bringing their lived experiences into the space she created. The idea of explicitly depending on the audience's participation, and creating for the audience has shaped my process in this project, and challenged me to be more aware of working for my audience throughout the process in all of my work.

Shared Shelf/JSTOR Forum: Guilford College's Platform for Sharing Collections and Archives with the Public

Elena Sippel, McKayla Clark, Evelyn Amick
Art, Computing Technology and Information Systems

Faculty sponsor: Gwendolyn Erickson • Project mentor: Terry Hammond

Session: Poster and Exhibition 1

Location: Main Level Poster and Exhibition Space • Time: 11:30 AM-12:30 PM

In the initial grant proposal for Council of Independent Colleges Consortium on Digital Resources for Teaching and Research, we recognize that many of Guilford's collections have been left unseen and are even in danger of being forgotten. This project is an effort to pull together our histories and treasures that are hidden throughout Guilford's campus. This project exemplifies ways Guilford is using [JSTOR Forum](#) in multiple programs and departments to utilize already existing campus resources for teaching, learning, and showcasing student scholarship, as well as increase the discoverability and public awareness of Guilford's unique collections. As passionate students working with the Art Gallery and Theater Department, we are bringing this mission to fruition.

Black Women's Agency in U.S. Institutions: Worship in the Black Church

Laura Sippel
Sociology & Anthropology

Faculty sponsor: Naadiya Hasan

Session: Black Women's Agency in U.S. Institutions

Location: Art Gallery • Time: 4:15-4:30 PM

This presentation examines how Black women act as active agents within the Black church, working to advance their social position and gain upward mobility despite barriers and inequalities created by systems of race, gender and class. I identify that much of Black women's agency and empowerment within the Black church develops from and can further motivate liberating styles of worship, such as gospel music, prayer groups, educational leadership, and the inclusion of Black Liberation and Womanist theologies in sermons. In examining the agency of Black women within the Black church, I reveal the significant role the institution of religion plays in building an affirmative community that all members of a marginalized group can participate in.

Surface Water Quality Research in Rwanda

Thomas Soiles

Geology

Faculty sponsor: Holly Peterson

Session: Poster and Exhibition 3

Location: Main Level Poster and Exhibition Space • Time: 2:45-3:45 PM

Landfills are necessary parts of urban and rural sanitation systems. Water that infiltrates landfills may, however, leach out toxic elements that could contaminate nearby ground and surface water. Unlined landfills allow for water, which has passed through the landfill, to more easily penetrate the ground water and get into surface water. In late July 2017, during Rwanda's dry season, we took water samples from six sites along the Gatunga stream, its tributaries, and the Nyabugogo River, all of which are located downstream of an unlined landfill near Kigali, Rwanda.

The samples were analyzed for elemental concentrations using ICP-MS and preliminary results indicate that concentrations of lead, arsenic, cadmium, barium, and other elements sometimes associated with landfills were all below the US EPA primary drinking water standards and aquatic life surface water guidelines. The water was moderately hard and exhibited pH levels that ranged from pH 5-6. The hypothesis has shown that elemental concentrations will increase because the samples were taken during the dry season when little to no rainfall infiltrated the landfill.

Additional research is needed to test for organic compounds and to assess and compare results from the rainy season with these results from the dry season.

Education Inside-Out: Interspecies Community

Thomas Soiles, Hazel Wechsler, Jessica Kent, Willow Stevenson

Art, Geology

Faculty sponsors: Holly Peterson & Mark Dixon

Session: Education Inside-Out

Location: The Quad • Time: 2:45-3:45 PM

Our project was to create an outdoor classroom that integrated the environment, community, education, and people. Using plants, rock, soil and moss we have designed and modeled an intentional space that fosters commune between plants, animals, and humans. A rock maze, rain chimes, and an overhang constructed from vines and wood cover the space. Ideally the space would be large enough to fit 10-15. We will have a miniature model as well as a ½ size model at GUS.

The Journalist as Witness: Politics, Protests & Displaced Peoples

Praveena Somasundaram, Abigail Bekele, Julia Martins de Sa, Andrew Walker
Journalism (English and Media Studies major)

Faculty sponsor: Cheryl Hatch

Session: Presentations 2

Location: Experimental Classroom • Time: 9:45-10:15 AM

The journalist as witness is a fundamental force in a democracy and our world. In this current political climate, some politicians and members of the public challenge the role and legitimacy of the news media. With our experiential program, professional journalists coach and inspire the next generation of journalists who will serve the public interest.

During this weekend, students learn what it's like to tackle a story on deadline, to work in a team with an editor to produce a story for print, the web or broadcast. They have a chance to spend time with experienced professional journalists who will inspire and mentor them. The students will leave campus and spend time in the community. Members of the community are then invited to campus to see their stories—the students' work—screened on the final evening. The students will forge friendships and build networks in the community and among their peers and professional journalists. It's a rewarding experience of both learning and service.

Participating colleges and universities: Guilford College, Ohio University, University of Mississippi, Allegheny College, University of North Carolina Greensboro, North Carolina Agricultural and Technical State University.

The conference and multimedia workshop is hosted in partnership with the Center for Principled Problem Solving.

Dis wo ich herkomm (This is Where I'm From)

Ian Stafford, Dafne Sanchez Aguirre, Nicolas Ortega, Iain Parrott, Caleb Bausman,
Michael McShane, Colleen Jackson
German

Faculty sponsor: Dave Limburg

Session: Spanish and German Panels

Location: Experimental Classroom • Time: 11:45 AM-12:30 PM

Samy Deluxe, Özlem Topçu, Khuê Pham: three German authors, born in Germany. Rafik Schami, Fatih Akin, Yasemin and Nesrin Şamdereli: all German writers and filmmakers, all call Germany home. What is your home, how do you define it? We have been exploring this idea in our German seminar this semester. Students will present their research, from a variety of perspectives, on the new, evolving understanding of "Heimat" in today's increasingly multicultural Germany. In the words of German rapper Samy Deluxe: "Dies ist das Land, wo wir leben/Dies ist das neue Deutschland/Dis wo ich herkomm" [This is the country I live in/This is the new Germany/This is where I'm from]. Students will present in German; please bring your earbuds for a simultaneous interpretation in English.

Bonner Senior Presentations: Eliza Stevenson, Marimar Mantuano, Isabel Gutierrez

Eliza Stevenson, Marimar Mantuano, Isabel Gutierrez
Bonner Center for Community Service and Learning

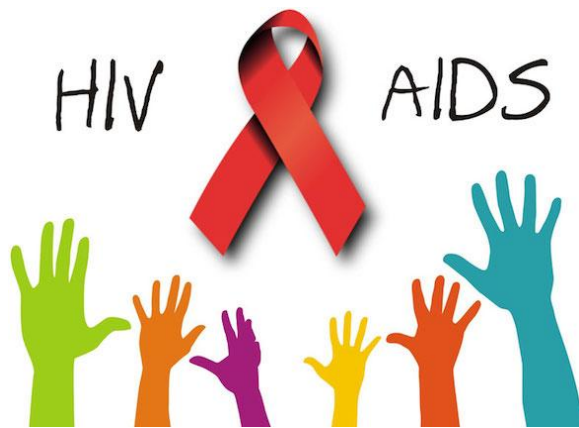
Faculty sponsor: James Shields • Project mentor: Audrey Mangili

Session: Bonner Senior Presentations
Location: Main Level Presentation Space • Time: 10:45-11:15 AM

Isa: I will touch on various aspects of my life that Bonner helped me improve on. As a chemistry major, I was unsure of a path that could connect all my passions until I worked at the farm. There I learned more about food production, farmworkers rights, and issues regarding food scarcity. As part of Project Community, I gained skills that helped me in other areas of personal growth such as academics, athletics and interpersonal relations. I have also worked with tutoring sites that have assured me that science is my passion.

Marimar: A recent study (Mantuano, 2017) showed that Guilford English Language Learners (ELL) college students report higher levels of self-esteem than Guilford English-native-speaker college students. This current research project investigated reasons why ELL students report such levels of self-esteem among the immigrant and refugee community. My service learning experience with Bonner has encouraged me, and provided the resources to develop this research along with the Education Studies Department.

Eliza: This presentation will discuss work Eliza has done in the realms of environmental/food justice and reproductive/gender justice, including an internship with the National Parks and coordinating the YWCA program for two years. In light of her experience in Bonner, Eliza will explore the differences between 'interdisciplinary' and 'intersectionality' and the important distinction between these lenses and their importance to her understanding of social justice.



**Black Women's Agency in U.S. Institutions:
HIV/AIDS Activism and the Health Care
System**

Mara Stewart
Sociology & Anthropology

Faculty sponsor: Naadiya Hasan

Session: Black Women's Agency in U.S. Institutions
Location: Art Gallery • Time: 4:00-4:15 PM

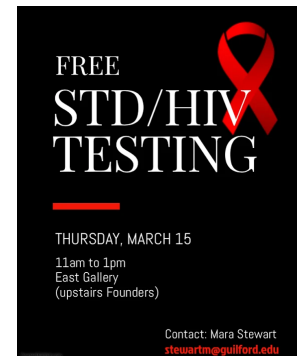
Due to deficiencies in access and quality of care in the traditional health care system, black women have been working to educate, fight, and help prevent HIV/AIDS in their communities. This presentation will highlight black women's activism as patients and providers, as they work inside and outside health care organizations for personal and community empowerment.

Breaking down barriers: HIV/STD testing

Mara Stewart
Public Health

Faculty sponsor: Kristie Wyatt

Session: Presentations 4
Location: Art Gallery • Time: 12:15-12:30 PM



Building on an internship from this past summer at Triad Health Project (a local HIV/ STD testing clinic), I used my experience to establish two testing events this past year. From these events, I learned about different barriers that prevent people from getting tested and how to break these barriers down.

Having Fun in Learning German

Risa Suzuki

German

Faculty sponsor: David Limburg

Session: Presentations 7

Location: Experimental Classroom • Time: 4:45-5:00 PM

I enjoy learning German at Guilford College. I had been interested in German because of my curiosity for languages, some songs I knew, and some facts about Germany. Also, people told me that Dave was a great professor, and when I got to his class, his teaching fascinated me. We practice communicating in class after we study by ourselves with Dave's unique textbook. He uses various approaches such as visual materials, group activities, and songs. I always look for what I can "steal" from him as a language education major and hopefully, a future English teacher. Since singing is an effective way to learn languages, I am going to try teaching some Japanese with a song in this presentation.

Anti-Homophobia with Anti-Trans Implications

Julia Tasho

Philosophy, Women's, Gender, and Sexuality Studies

Faculty sponsor: Nancy Daukas

Session: Presentations 6

Location: IDEA Incubator • Time: 2:45-3:00 PM

Bonner Senior Presentations: Arraya Tull, Nate McManus, and Donzahniya Pitre

Arraya Tull, Nate McManus, Donzahniya Pitre

Bonner Center for Community Service and Learning

Faculty sponsor: James Shields • Project mentor: Audrey Mangili

Session: Bonner Senior Presentations

Location: Main Level Presentation Space • Time: 10:15-10:45 AM

Arraya and Nate: As Bonner Scholars & project coordinators, Nate McManus & Arraya Tull have encountered various challenges throughout their college career. From beginning as freshman in

search of leadership to growing into leaders themselves in the community, the journey for both prove the true power of the bonner program. Raised in the city of Philadelphia, Arraya and Nate took their experiences with hunger and were able to connect them with the service done in Greensboro pertaining to food insecurity amongst veterans. This presentation allows for them to express their long and rewarding journey of growth amongst themselves and within the Bonner community.

Donzahniya: Donzahniya Pitre will be focusing on the highlights and challenges of her experiences within the Bonner program as well. She will also focus on her academic growth and how Bonner has shaped what she will do in society after graduating. Her education service work within her home community in Oakland, CA has played a significant role in the service she chose to focus on at Guilford.



TIME! SPACE! intimacy?

Lesly Vasquez

Art

Faculty sponsor: Theresa Hammond • Project mentor:
Molly Gochman

Session: Poster and Exhibition 1

Location: Main Level Poster and Exhibition Space:
Alcoves • Time: 11:30 AM-12:30 PM

Guilford College Alumna, Molly Gochman '01, gave an artist talk on Feb. 10th in the Hege-Cox Art Building to several students about her work that was then followed by activity in which they engaged in, "Intimacy": putting clay on the palm of their hands and shaking someone else's hand, creating a visual representation of the interaction between them. Molly's biggest project right now is the 'Red Sand Project' but aside from that her work has evolved into becoming an illustration of how someone can enter another dimension without disrupting the continuum of time, rather thickening it. Since becoming an artist, Gochman has been creating collaborations between herself (the artist), and her audience, to explore the relationship between the environment and the experiences both parties have individually and collectively, created a common language, all without the need for words. With Gochman's method, my research will expand on the idea of time and how it affects the space between the connections we make to be redefined as, intimacy. As humans that interact with the concepts of time and space daily, you will have a better understanding on the ways in which unknowingly we are continuously engaging in the desire to create intimate connections.

The Effects of Green Tea on Acid-Producing Bacteria of the Buccal Flora

Dana L Waskiewicz

Biology

Faculty sponsor: Melanie Lee-Brown

Session: Poster and Exhibition 1

Location: Main Level Poster and Exhibition Space • Time: 11:30 AM-12:30 PM

Research indicates that there are many health benefits to regular consumption of green tea. The health benefit of an improved oral health is especially important because oral health is essential to general health and well-being at every stage of life. Green tea has antimicrobial properties and that could lead to improved dental health by lowering the risk of infection. This study tested whether the consumption of green tea would alter the buccal flora, specifically decreasing the presence of acid-producing bacteria that correlate with the formation of dental caries. In this research, one group consumed green tea three times a day for a week and another group abstained from any tea product. Each saliva sample was mixed with liquid Snyder Test Agar (STA) and was also cultured on Mannitol Salt Agar (MSA) and the colonies were examined for color change, by 16S rDNA analysis and tested for sensitivity in a Kirby Bauer disk diffusion. Through this analysis, the culturable genera that reside in the buccal cavity of each person was determined. Results showed that the experimental group had a significant reduction in Lactobacillus and Streptococcus spp. and a small reduction in the number of Staphylococcus spp. The results support that green tea, when consumed regularly, affects the microbial community by reducing the population of only certain species. This reduction could lower the rate of infection and gum disease and thereby influence overall patient health.

It's Getting Hot In Here: Tariff Pressures on Solar Panels and Their Effect on Labor Within the Solar Electric Power Generation Industry

Caroline Webster

Economics

Faculty sponsor: Natalya Shelkova

Session: Presentations 3

Location: IDEA Incubator • Time: 12:15-12:30 PM

While a trade war with China looms due to President Trump's proposed tariffs on steel and aluminum, these tariffs are not the first to be levied upon China in the name of protectionism. Roughly one year after Trump's inauguration, tariffs on solar panels from China were imposed using the justification that these trade moves would bring back jobs to the United States. This analysis

will attempt to clarify what can happen to an industry when the federal government interferes due to a protectionist outlook on the economy through the lens of labor economics. An examination of the demand for labor in the Solar Electric Power Generation Industry will be examined from multiple angles. First, the expected demand for labor resulting from tariffs will be discussed, followed by an examination of the factors that affect general demand for labor. Then, employment and unemployment trends will be discussed in terms of past employment trends, current occupations, and future employment trends. Lastly the business cycle and economic conditions will be discussed, and how those have affected firms within the solar electric power generation industry. Market predictions based on this analysis will include economic and political indicators within the United States.

Evolution of the Cinematic Superhero: Batman in American Society

Ezra Weiss

Theatre Studies, Film

Faculty sponsor: Chad Phillips

Session: Video Presentation

Location: Hub 2 • Time: 10:00-11:00 AM

Ever since his introduction in 1939, the comic book superhero Batman has been seen by many as one of the most recognizable characters in fictional media. Over the years, he has been presented in many forms, ranging from the original comic books to the 1960's television series. However, his cinematic portrayal in 1989 under the direction of Tim Burton introduced the character in a more serious manner, and from then to the current time period, both the superhero and his world have been reinterpreted in multiple films through the use of different directing methods. This documentary offers an exploration of how different directors have used the cinematic interpretation of Batman through their individual styles in order to express commentary on the various political, economic, and social movements that have occurred within the USA during the decade of each movie's time of release. In both *Batman* and *Batman Returns*, Tim Burton addresses the politics and social trends in America during the Reagan administration from a gothic, mysterious standpoint. In contrast, Joel Schumacher presents the growth of the economy during the 1990s in a colorful, campy, environment in *Batman Forever* and *Batman & Robin*. Finally, Christopher Nolan uses a gritty, realistic interpretation of Batman's world in his Dark Knight trilogy to serve as a metaphor for the rise of the War on Terrorism and the various events which would lead to its contraction in.