

Elevations

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UNIVERSITY
OF WYOMING

College of
Arts and Sciences

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Elevations

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Cover Image

A scene from the Spring 2018 production of *Six Songs from Ellis*, created and directed by Professor Marsha Knight, Department of Theatre and Dance.

Photo by Donald P. Turner, © DP Turner Photography

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Elevations is the magazine for College of Arts and Sciences alumni, friends, and constituents. Address comments and questions to Diana Marie Waggener, Managing Editor, College of Arts and Sciences, Department 3254, 1000 East University Avenue, Laramie, WY 82071; or send email to dream@uwyo.edu.

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Dear Friends of the College of Arts and Sciences:

As we come to the end of fall semester 2018, I am amazed at how quickly the time passed. It seems like only yesterday when we welcomed new students to campus and entered into the brisk fall weather. Now the snow is flying and faculty and students are getting ready for finals and December commencement.

Academic year 2017-2018 was another year of fast-paced change, but we continued to embrace those changes as opportunities for growth and planning. After several years of budget constriction, we were able to reboot our depleted faculty lines with 27 much-needed new hires! In addition, UW employees received vital raises for the first time in many years, and while the market and merit pools were not as large as we might have wished, I believe this is a good first step in what I hope will be a regular cycle of raises in the years to come—as UW’s budget stabilizes.

Strategic planning continues to be a major focus for all UW entities this academic year, and, for the College of Arts and Sciences, this means enhancing much of what we always have done. To that end, we are investing in faculty seed grants for visionary, interdisciplinary ideas; Dean’s Graduate Scholar awards for our most outstanding graduate students; faculty travel awards; “InReach” activities with our community; and special symposia to

enrich our teaching and learning. Our vision in A&S is to create a robust foundation in the liberal arts and sciences that inspires our students to become life-long learners engaged in service to their communities, the nation, and the world.

Elevations’ A&S Outreach and Engagement section presents a modest sampling of the College of Arts and Sciences’ dedication to the land-grant mission and service learning, and the Briefs section offers a small taste of the good news that abounds across the college. This year’s feature articles demonstrate the depth and breadth of research and creative activity embodied in A&S, as we move from a renowned astronomer’s theory and computational modeling that helps to explain the secrets of the universe to a multi-genre work that explores immigration through Ellis Island. Whether implicit or explicit, every page of *Elevations* is an invitation to celebrate our strengths in teaching, cutting-edge research, and success for the entire A&S family—students, faculty, staff, alumni, and friends!

As part of the A&S family, I urge you to share what you learn in *Elevations*. Brag about us every chance you get! As always, I am amazed by the creativity and innovation we bring to bear on our challenges and opportunities in A&S. Thank you for your part in our successes!

Best regards,

Paula M. Lutz
Paula M. Lutz, Dean

A&S Briefs

Excavations at the La Prele Mammoth Site in Converse County offer clues about Wyoming's first peoples

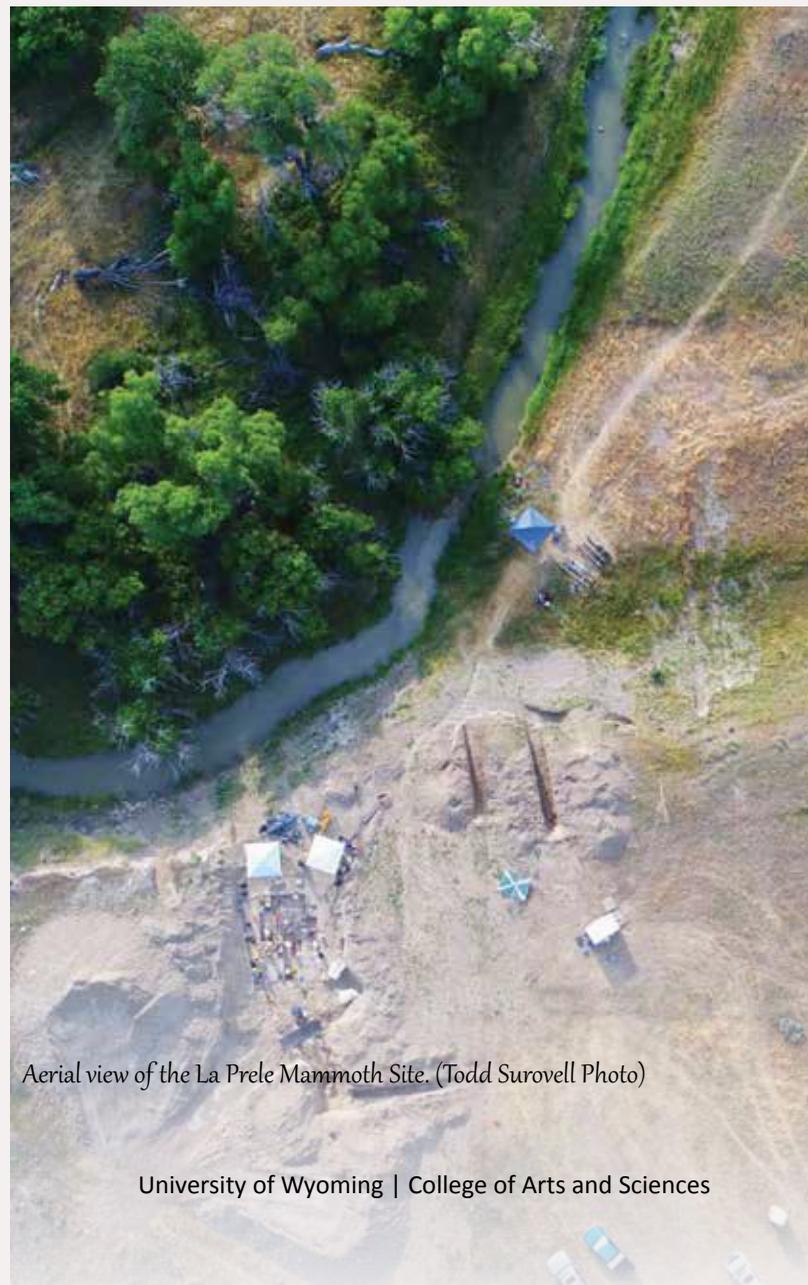
Professors Todd Surovell and Robert Kelly and Ph.D. student Madeline Mackie, Department of Anthropology, recently uncovered the remains of a hearth feature, indicating the former location of a fire, approximately 40 feet south of a Columbian mammoth at the La Prele Mammoth site in Converse County. In the same area, they found at least three fragmentary bone needles (among the oldest implements of that kind found in the New World), a bone bead, and several stone tools. Here, they also recovered the remains of a young bison. These findings—along with a similar area to the west of the mammoth site—with a hearth, stone tools, and bison bone, shed light on Wyoming's first human inhabitants, who migrated to North America from Asia between 14,000 and 13,400 years ago.

From more than a dozen sites across North America, Clovis peoples (named after the type of spear point they made) are known to have hunted mammoths, mastodons, horses, camels, and other large extinct animals. Clovis mammoth kill sites usually contain remains of one to several animals, chipped stone implements used to kill and butcher them, and small chips from re-sharpening those tools.

“When hunters kill animals,” explains Surovell, “they normally butcher the animal and transport choice parts back to their campsite. When people killed a mammoth, an animal weighing up to 10 tons, instead of moving the animal to the camp, they picked up and moved their camp to the animal.”

Based on the types of stone present in an excavated site, archaeologists can determine where people were before they reached an excavated site. The cluster of artifacts found south of the mammoth site includes items that originated in the Guernsey and Hartville area—a little more than 50 miles southeast. Those artifacts unearthed to the west of the mammoth are made of a different material altogether, and the source for most of the objects is uncertain, but one item indicates that the people at this part of the site came from the area southwest of Rawlins—more than 150 miles away.

“This suggests that at least two, if not several groups of people from different parts of the state, converged near Douglas, Wyoming, to hunt large animals at the end of the last Ice Age,” says Surovell. “The La Prele Mammoth site is unique in the earliest period of North American archaeology in that it allows University of Wyoming archaeologists to explore aspects of the social organization of the first human inhabitants of the state of Wyoming.”



Aerial view of the La Prele Mammoth Site. (Todd Surovell Photo)



These bone needle fragments, discovered at the La Prele Mammoth site, are among the oldest ever found in North America. (Todd Surovell Photo)



This Clovis spear point from the La Prele Mammoth site was used to hunt several large animals, including mammoths. (Todd Surovell Photo)

Recent excavations of the La Prele Mammoth Site were funded by the National Geographic Society, the Wyoming Cultural Trust Fund, the QUEST Archaeological Research Program, and the Shlemon Center for Quaternary Studies.

Department of Philosophy and Religious Studies soon to offer courses and programs in Buddhist Studies

Thanks to a grant from a private philanthropic organization based in Hong Kong, the Robert H.N. Ho Family Foundation, the recently merged Department of Philosophy and Religious Studies will develop a professorship and offer courses and programs in Buddhist Studies.

The Robert H.N. Ho Family Foundation has a dual mission of promoting appreciation of Chinese arts and culture to advance global learning and of cultivating a more profound understanding of Buddhism within the context of contemporary life. The foundation offers grants to establish teaching positions in Buddhist studies through an open,



Pexels Photo

international competition. An international panel of Buddhist studies scholars reviewed the Department of Philosophy and Religious Studies' application and recommended funding to support Buddhist studies at UW.

"The Department of Philosophy and Religious Studies showed great initiative in going after this very competitive professorship. The college is very proud of this accomplishment," says Dean Paula Lutz. "It fits well with the strategic plan for the department. In addition, this new hire will strengthen

the humanities division and our foundational curriculum in the liberal arts and sciences."

A&S Briefs

UW-Teton STEM Academy turns middle school students into star gazers and scientists

“AstroCamp: Journey to the Stars” summer science camp took place from 2010 to 2015 until funding for the camp was depleted. Thanks to a three-year \$150,000 commitment from an anonymous Teton County donor, 20 Wyoming middle school students became stargazers and scientists August 2018 while attending the revamped UW-Teton STEM (science, technology, engineering, and mathematics) Academy.

Organized and conducted by the Department of Physics and Astronomy and the Wyoming NASA Space Grant Consortium, the hands-on camp gave students a chance to observe the universe with professional telescopes; study astronomical images on computers; construct scientific spectrographs to identify chemical elements; build and launch model rockets; conduct soil tests; create solar ovens; and test their own Mars landers to see whether or not—in their particular circumstance—they could land an egg softly enough that it wouldn't break.

Professional astronomers, UW graduate students majoring in astronomy or education, and high school and junior high school teachers led camp activities, including classes in problem solving, earth sciences, and engineering and design concepts.

“I think camps like this are the most far-reaching activity we can undertake for the benefit of Wyoming's youth,” says Professor Chip Kobulnicky, Department of Physics and Astronomy. “We want to inspire them onward to challenging, fulfilling careers that empower future generations and prosper Wyoming as a state. I'm excited to have funding to sponsor this camp again because it's possibly the most rewarding thing I do all year—impacting the lives of these young people.”



Thanks to an anonymous donor, middle school students will have experiences similar to those of this former “AstroCamp: Journey to the Stars” participant. (UW Photo)

Kobulnicky co-directed the UW-Teton STEM Academy with Samantha Ogden and Megan Candelaria, both from the Wyoming NASA Space Grant Consortium. Wyoming students entering the sixth, seventh, and eighth grades were encouraged to apply to the free academic camp, which supports historically underserved and underrepresented students with limited opportunities. Campers were chosen based on demonstrated interest in astronomy and space, as well as at least a “B” average in science and mathematics and a passing score on the state's standardized science and mathematics tests. As part of the application process, students submitted written essays explaining why they wanted to attend the science camp.

“The fact that we had almost three times as many applicants as we had spots says there's a big demand for residential programs like this,” comments Kobulnicky. “We want these sixth- through eighth-graders and their families to see science, math, engineering, and UW as a realistic part of their future. I'm grateful for the vision of this generous donor to launch something that can become an ongoing legacy.”

UW Rocky Mountain Herbarium and partners receive \$2.9 million award from NSF

The UW Rocky Mountain Herbarium is a leading partner in a \$2.9 million award from the National Science Foundation (NSF) to create a comprehensive digital archive of more than 1.7 million plant specimens native to the Southern Rocky Mountain region. University of Colorado, Boulder, is the principal lead for the award, which includes 38 universities, botanical gardens, national parks, and Native American Nations. As the largest herbarium in the region, the Rocky Mountain Herbarium will contribute a significant number of specimens, as well as assist smaller institutions to digitize and image samples.

Once finished, the database, containing more than 4,000 regional plant species collected from the 1800s to the present, will be available to the public. The map-based application will allow visualization of species' distributions and make available high-resolution images of plant specimens. "Herbarium specimens are used more and more to document natural resources, elucidate evolutionary relationships and processes, describe the effects of climate change, and to identify organisms and landscapes of conservation concern," says Burrell "Ernie" Nelson, Rocky Mountain Herbarium curator. "Consolidating specimen data from these institutions will lead to more and better understanding of these topics in the Southern Rocky Mountains and may bring to light patterns that have been previously invisible."

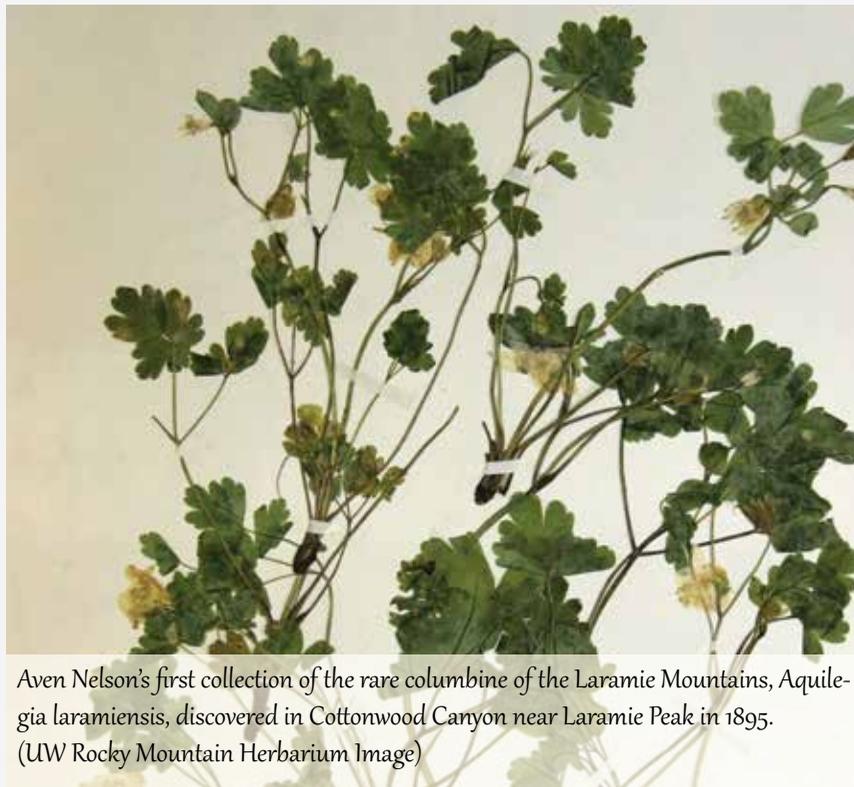
Already a leader in the region and among herbaria, the Rocky Mountain Herbarium is the largest facility of its kind between Saint Louis and the West coast. The facility holds the most expansive collection of Wyoming and Rocky Mountain plants in the world and reflects the region's biological and evolutionary history. The Rocky Mountain Herbarium specimen

database currently contains 850,000 specimen records that may be searched.

NSF support will help to increase the rate of specimen digitization and imaging at the Rocky Mountain Herbarium and integrate an estimated 670,000 Southern Rocky Mountain specimens into the new Southern Rockies portal. Curator Nelson will oversee specimen selection and imaging at the herbarium; Associate Librarian Larry Schmidt, UW Brinkerhoff Geology

Library, is project manager for digital processing and work flow. UW Libraries also are involved in data management, file processing, and preservation aspects of the project.

For the purpose of this project, the Southern Rocky Mountain region is defined to include the mountains, basins, and high plains of southern Wyoming, Colorado, and northern New Mexico; the continuous high plains to the east of those states; and the Colorado Plateau in eastern Utah and northern Arizona.



Aven Nelson's first collection of the rare columbine of the Laramie Mountains, *Aquilegia laramiense*, discovered in Cottonwood Canyon near Laramie Peak in 1895. (UW Rocky Mountain Herbarium Image)

A&S Briefs

Botany professor uses drones to study plants more than 70 feet above the ground

What does researching plants and filming extreme sports have in common? Though it seems unlikely, the answer is drones.

Drones may not be the first thought that comes to mind when thinking of plant research, but Professor Greg Brown, Department of Botany, is using drones in a new way.

Brown, who also is an associate dean of the College of Arts and Sciences, has been studying high-canopy vegetation in the neo-tropical forests of South America for 35 years. Now, he is using drones to photograph epiphytes, plants that live high in the crowns of trees that can range from 70 to 150 feet tall.

One key aspect of high-canopy research is to find ways to access the plants under study. While climbing trees is a traditional and low-cost access method, it also requires technical training, gear, and professional climbing assistance. Because specific sought-after plants sometimes do not turn up in the trees where researchers think they will be, tree climbing is often unsuccessful and is dangerous and difficult, even with assistance.

Brown developed the idea of using drones as reconnaissance tools to make the application of tree climbing more efficient. He took a team to Costa Rica summer 2018 to test the

theory's feasibility through a College of Arts and Sciences faculty seed research grant.

"I did an exhaustive literature search and found that nobody had ever done any close-up photography of plants, let alone epiphytic plants," Brown says. "Then, I started collaborating with a colleague here on campus, Senior Research Scientist Ramesh Sivanpillai, Department of Botany. He knows a lot about remote sensing, and that's really what this is—you're sensing or photographing something from a distance. So, with that, we wrote a proposal, and it got funded."

The interdisciplinary team that went to Costa Rica consisted of Brown; Assistant Professor Brandon Gellis, Department of Visual and Literary Arts; Sivanpillai, and UW students and Laramie natives Matthew Lehmitz (a master's candidate) and William Harris (an undergraduate).



Greg Brown Photo

Each member of the team played a role in piloting and monitoring the drones, as well as executing the photography. Over the course of three days, the team collected more than 1,200 digital photographs of the high-canopy epiphytes, demonstrating the potential of using small drones to observe and document out-of-reach plants more efficiently.

Collected photographs already are impacting Brown's research, and other botanists also have shown an interest in researching other high-canopy plants such as mosses and lichens.

"The tropical forest canopy is considered to be the last frontier of biodiversity because it is so difficult to access," Brown explains. "Just having a photograph, we're seeing things that we certainly could not see from the ground and things that I did not anticipate at all."

The next step in Brown's research using drones will be working with engineers to design a drone that will be able to collect and carry plant samples back to the ground, which would further eliminate the need for tree climbing. He is preparing a grant proposal to the National Geographic Society to fund a return trip to Costa Rica as well as Brazil to collect new data with the use of drones.

History alumnus receives award from the National Cowboy and Western Heritage Museum

Associate Research Scientist Greg Nickerson (M.A. History 2010), Wyoming Cooperative Fish and Wildlife Research Unit, received the 2018 Outstanding Magazine Article Wrangler Award from the National Cowboy and Western Heritage Museum in Oklahoma City, Oklahoma. His historical piece, "All-American Indian Days and the Miss Indian America Pageant," was published in the summer 2017 issue of *Montana The Magazine of Western History*, which has been showcasing people, places, and events that shape the western region since 1952.



eastern Montana who traveled to Sheridan to shop were faced with prejudice from main street businesses that refused to serve them.

Native people and reform-minded community leaders joined together to create All-American Indian Days and the Miss Indian America Pageant as a setting of reconciliation, and these efforts earned Sheridan national recognition. The winners of the Miss Indian America Pageant embraced the opportunity to use the honor to promote interracial understanding and American Indian culture.

Originally from Big Horn, Nickerson's award-winning article is based on interviews with Miss Indian America Pageant organizers and Crow Fair participants, as well as archival materials that he used while curating an exhibition on All-American Indian Days for the Sheridan County Museum a few years ago. The All-American Indian Days and the Miss Indian America Pageant at the Sheridan WYO Rodeo in the early 1950s was developed to improve race relations in Sheridan.

During this period, Indians from reservations in southern and

"This article and award really is a tribute to the Sheridan volunteers and American Indians who put on the Miss Indian America Pageant from 1953-1984 and to the local [Sheridan] archivists who preserved records of the event," Nickerson says.

To read Nickerson's full article, go to: gregorynickerson.files.wordpress.com/2017/08/all-american-indian-days-and-the-miss-indian-america-pageant-montana-the-magazine-of-western-history-summer-2017-gregory-nickerson.pdf

Six Songs from Ellis

Immigration oral histories brought to life

Diana Marie Waggener



Fair Use Image

“Immigration and refugee crises are critical topics today just as they were 100 years ago. Unsubstantiated fear and misinformation prompt current policies and actions of bias, beckoning reflection and awareness of who we, as Americans, are and the true diversity of this nation. Attitudes toward access and response and to need and crisis can benefit from stories—inspiring, cautionary, and human—of those who helped to build this country.”

*- Professor Marsha Knight, Department of Theatre and Dance
Creator and Director of **Six Songs from Ellis***

Prologue: Coming to America

The word “immigration” is not written in the U.S. Constitution nor in any of its amendments. Until the first Federal Immigration Law was enacted in 1875, immigration was regulated by the states through the U.S. Constitution’s 10th Amendment, which asserts: “The powers not delegated to the United States by the Constitution, nor prohibited by it to the states, are reserved to the states respectively, or to the people.” In 1876, the U.S. Supreme Court ruled that immigration regulation was exclusively the responsibility of the Federal Government, and, in 1891, Congress established the Immigration Service. At that time, the Federal Government began taking an active role in direct control of inspecting, admitting, rejecting, and processing all immigrants seeking admission into the United States.

From 1855 to 1890, Castle Garden in the Battery, originally known as Castle Clinton, was the New York State Immigration Station. During that time, approximately eight million people, mostly from England, Ireland, Germany, and the Scandinavian countries, were among the first large wave of immigrants who entered, remained in, and populated the United States. In 1890, Castle Garden was closed, and the federal reception center was moved to the U.S. Barge Office, located on the eastern edge of The Battery waterfront.

Toward the end of the nineteenth century and into the early twentieth century, European political instability, religious persecution, anti-Semitism, and deteriorating economic conditions resulted in the largest mass human migration in the history of the world. The U.S. Barge Office could no longer

manage these growing numbers of immigrants, so the United States Federal Government intervened, and, on January 1, 1892, the Immigration Service opened the first federal immigration station on Ellis Island. Located in New York Harbor’s upper bay, just off of the New Jersey coast and within the shadow of the Statue of Liberty, was the “golden door” through which more than 12 million immigrants entered the United States between 1892 and 1954.

First- and second-class passengers who arrived in New York Harbor were not required to undergo the inspection process at Ellis Island. Instead, they underwent a brief inspection aboard ship—a person who could afford a first- or second-class ticket, it was believed, would be less likely to become a “public charge” due to medical or legal troubles. After first- and second-class passengers disembarked, third-class passengers, who traveled in crowded and often unsanitary conditions near the bottom of steamships, were transported from the pier by ferry or barge to Ellis Island. There, they would undergo medical and legal inspection. The two agencies responsible for processing immigrants at Ellis Island were the United States Public Health Service and the Bureau of Immigration, later known as the Immigration and Naturalization Service (INS).

For those 20 percent of immigrants who were detained or saw family members excluded from entry, Ellis Island became the “Island of Tears.” For the other 80 percent who were at the island for only a few hours or days and then set free to begin their new lives in America, it was the “Island of Hope.” Official reasons for detention and sometimes exclusion included

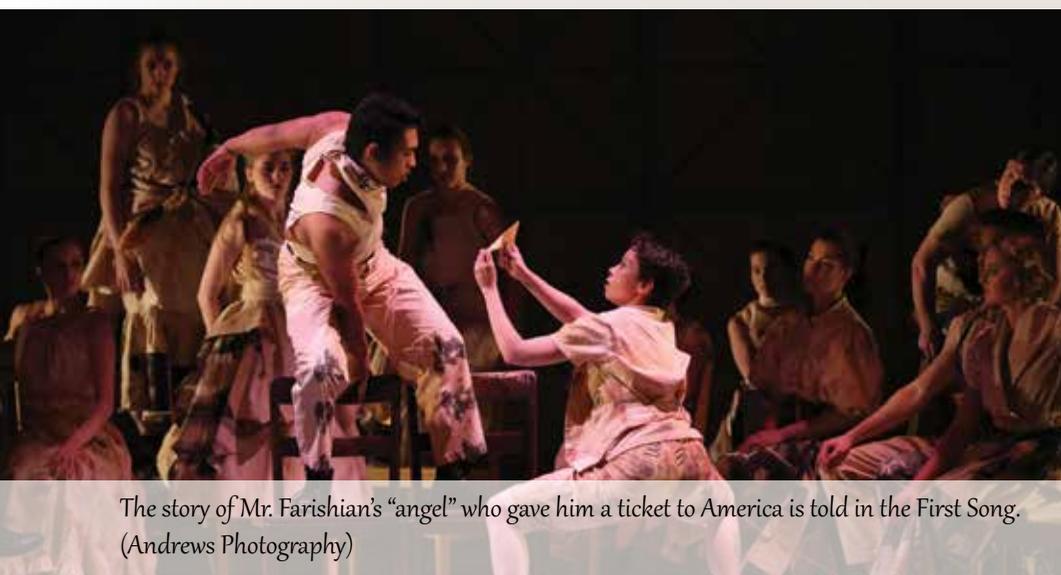
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Among elements of the production are projections of each individual's name, country of origin, and year of arrival to America. (Andrews Photography)



In the Third Song, "Water Underfoot," three women dance with ladders, symbolizing possibility. (DP Turner Photography)



The story of Mr. Farishian's "angel" who gave him a ticket to America is told in the First Song. (Andrews Photography)

diagnosis of a contagious disease that would endanger public health or a legal inspector's determination that the immigrant was likely to become a "public charge" or an illegal contract laborer. Of those immigrants who underwent inspection, only 2 percent ultimately were deported.

From the beginning of the mass migration, politicians and nativists demanded increased restrictions on immigration, leading to the establishment of a literacy or intelligence test, the Chinese Exclusion Act (1882), and the Alien Contract Labor Law (1885). Quota laws were passed in 1924 under the National Origins Act; these restrictions were based upon a percentage system according to the number of ethnic groups already living in the United States as per the 1890 and 1910 Census.

After World War I, United States Embassies were established in countries all over the world, and prospective immigrants applied for their visas at American consulates in their countries of origin. Paperwork and medical inspections were done in the immigrant's home country, and, after 1924, the only people detained at Ellis Island were those experiencing problems with their paperwork or those who were war refugees or displaced persons.

Ellis Island oral histories

Established in 1973, the Ellis Island Oral History Project preserves immigrants' personal memories of their experiences at Ellis Island between 1892 and 1954, as well as recollections of former Immigration and Public Health Service employees. Immigrants who participate in the oral history interview are asked to describe their family history, memories of daily life in their country of origin, reasons for immigration, journey to New York harbor, arrival and treatment at Ellis Island, and adjustment to their new life in the United States. Nearly 2,500 oral histories are available to researchers and the general public in the Oral History Library, located on the third floor of the Ellis Island Immigration Museum.

In 1990, the Ellis Island Immigration Museum opened to the public, and among its earlier visitors was Professor Marsha Knight, Department of Theatre and Dance. “I first considered the possibility of a work based on the experiences of immigrants while visiting the Ellis Island Immigration Museum,” Knight says. “I heard small snippets of oral histories included in the museum displays and considered the idea of incorporating their voices in a theatre/dance piece.”

Six Songs from Ellis: History becomes art

Born of this seed was the original 2009 production of *Six Songs from Ellis*, which toured and was presented at the Kennedy Center American College Theatre Festival, Region XIII, at Reno, Nevada, in 2010. This initial production explored similarities of immigration and refugee crises in the nineteenth and twentieth centuries.

Upon finishing the 2009 production, Knight realized that the structure of *Six Songs* is remarkably malleable and could be strengthened through some revision. “The first production needed attention and re-shaping on many levels,” explains Knight. “Certainly in the process of creating work worth doing, one hopes for the opportunity to reflect and amend—to see an idea develop with considerations that time affords.”

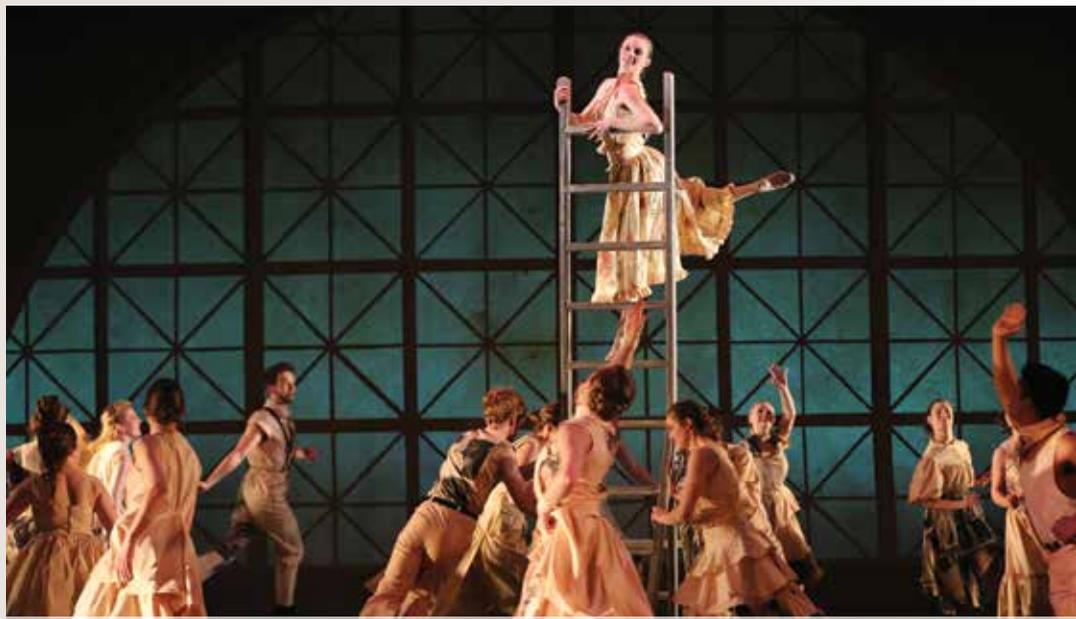
After shelving the project for a couple of years, Knight returned to Ellis Island in 2012 to consider whether or not to substantively revisit the work. “Frankly, I felt overwhelmed,” she says, “because I knew that I needed to devote more time and energy than I could at that point. But the premise of *Six Songs* captured me in a sense. The possibility of a sabbatical, as well as the timeliness of the theme, helped me to refocus my efforts.”

Knight took a year-long sabbatical in 2017, during which she deepened her research at Ellis Island, listening to and editing more immigrant oral histories.

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In the opening scene, dancers use chairs to symbolize home and its mobility when necessary. (Andrews Photography)



In the First Song, a gambler wins his niece a ticket to America. The dancers above depict her joy. (Andrews Photography)



In the Fourth Song, “The Change of Current,” musical theatre student Aili McLellan tells a story. (Andrews Photography)

As a result of her sabbatical research combined with prior visits to Ellis Island, Knight has amassed roughly 500 immigrant personal narrations. These accounts bring to life the emotions and thoughts of individuals who survived voyages as steerage passengers aboard large steamships, encountered U.S.-culture-biased literacy and intelligence tests, and sought asylum from religious persecution, violence, and genocide.

In addition, Knight conducted research at YIVO Institute for Jewish Research, the world's largest archive and library of Jewish history and culture, and she explored online collections from the Thomas Edison National Historical Park's Sound Archive and the University of California-Santa Barbara (UCSB) Cylinder Audio Archive. These original recordings of the human voice serve as auditory documentation of the music to which these earlier generations would have been exposed.

"My contact at YIVO was encouraged by my dear friend, Isabel Belarsky," explains Knight. "Isabel immigrated to the U.S. in 1930 when she was nine years old. Isabel's most incredible immigration story made up the 'Fifth Song: The Song of Isabel' in the 2009 production."

Isabel's father, Sidor Belarsky, a classically trained baritone, was able to move his family out of Russia—arranged through an unlikely connection at Brigham Young University—during a time when immigration was nearly impossible for Russian Jews. "Part of Sidor's legacy was to perform and record a trove of Yiddish folk songs," says Knight. "Thanks to Isabel, I became very familiar with Sidor's music."

Isabel encouraged Knight to visit YIVO, and she did so several times. "I had numerous recordings of Sidor's music, but many of his possessions, original albums, and other items are held at YIVO, and those were important materials for my research," says Knight. "The personal connection with

Isabel—our conversations, photographs, and story sharing—greatly impacted the direction of *Six Songs*."

YIVO staff guided Knight as she explored digitized historic recordings. In addition, two staff members in the Ellis Oral History Museum, George Tselos and Eric Byron, suggested the digital cylinder archives of the Thomas Edison National Park and UCSB collections. "Certainly, the recordings contextualized the oral histories to music of their time and opened a sea of options," notes Knight. "I ultimately did not include many early recordings for reasons of clarity, and much of the music used serves intermittently as underscore to actor/ audio text; however, the historic and cultural contextualization of recorded music, its development, and commercialization influenced by the mixing of cultures led me down paths I'd not imagined. Most interesting was an

increased understanding of Jewish life in the Lower East Side, historic synagogues still in the area, and Yiddish theatre that thrived right in the area where we were living during the sabbatical."



Musical theatre major Jenna Blazek (standing), a senior from Cheyenne, and Becca Maniscalchi (B.F.A. dance performance 2018) present an excerpt dedicated to the story of Isabel Belarsky. (DP Turner Photography)

Knight cites the month she spent reading every Armenian oral history in the Ellis Island collection as the most compelling episode of her research. Until she encountered these personal accounts, Knight, like many of us, did not realize the extent of the Armenian Genocide of 1915, during which as many as 1.5 million Armenians living in the Ottoman Empire were exterminated, either through massacres and individual killings, or from systematic poor treatment, exposure, and starvation. (Editor's note: Turkey denies the word genocide as an accurate term for these crimes. As of 2018, however, 29 countries have officially recognized these mass killings as genocide.)

"I think part of my fixation was disbelief that I had essentially no grasp of the enormity of the Armenian Genocide," Knight says. "How could this be? I had befriended a wonderful man and survivor of the genocide, Aram Farishian, in my first version of *Six Songs*. His oral history stayed with me, and I realized that the stories of his compatriots' flight from persecution would be the basis for 'The Second Song: The Song of Flight.'"

Of the approximately 500 oral histories she accumulated, Knight narrowed the number of immigrant voices to 85 for the 2018 production of *Six Songs*. Themes of economically forced separation, quotas, genocide, exclusion, relocation, and religious bias are illustrated through first-hand stories. Immigrant recollections also contemplate perceptions of freedom, access, economic contribution, and American identity.

A multi-genre work, *Six Songs* incorporates audio from immigrant oral histories and actor text, interwoven together with dance and movement to illustrate physical aspects of narrations. Also included are projections of historic photographs and on-going identification of each individual's name, country of origin, and year of arrival to America, accompanied by music authentic to the individual's homeland. All text and audio were excerpted directly from immigrant oral histories to accurately preserve their expression.

While contemplating choreographic motifs and technical devices that would occur within different stories and to unify themes, Knight considered the "physicalization" of verbal expression humans use when referencing what happened before us and what we continue to see in the present. "For instance, we think of being carried on the backs of others," Knight explains. "The way forward made possible only by hope, sacrifice, and work of those who came to America. Walking on backs, the contact and elevation of a body as a metaphor for the possibility of change, compassion, and what is done to improve circumstance."

Six Songs occurs within a modest set that employs chairs and ladders to symbolize the immigration experience. "The use of chairs in *Six Songs* serves as a representation of identity of place, the mobility and personal nature of home that can be transported by will or by necessity," says Knight. "The extensive use of ladders in *Six Songs* serves to represent possibility; of the effort and energy to ascend and resolve to improve; to climb."

To maintain the authenticity of personal accounts, Knight blended oral history recordings in exchange with actors' expression of text. "The aural experiences of recorded voice, as well as projecting signatures and names were incorporated into the production for this purpose," notes Knight. "*Six Songs*, however, is a theatrical experience; it is performance in the moment with actors and dancers conveying story and reflection. The authenticity of audio, enhanced by actors' shaping of expression aligned with the abstraction of dance, make the work a complex and compelling way to view our country's story of immigration—both past and present."

The Songs

Six "songs" or chapters tell the enduring story of immigration to the United States of America. The first song is "The Walk Away," followed by "The Song of Flight," "Water Underfoot," "Landing on Two Feet," "The Change of Current," and, finally, "At the Lady's Feet."

"I think of the use of 'Songs' in this piece as melodic expression; as thematic chapters of human voices," says Knight. "The 'Songs' all reference movement literally in the use of our feet to change place and to express. The delineations in 'Song' content are the greatest variant from the first version to the present."

Knight separated immigration stories (The Walk Away) from those of refugees (The Song of Flight). To parallel barriers and bias still encountered, she included stories of those for whom Ellis Island became the "Island of Tears" in the Fifth Song, "The Change of Current." The final section comprises reflections on coming to America, how individuals articulate what "being an American" means to them, and their viewpoints on their own contributions as immigrants to America.

Continued on Page 14. . .

“I have such appreciation for the simplicity of stories told,” says Knight, “things that people choose to tell that seem to matter the most in memory. What it was like to get a pair of shoes in preparation for the voyage, eating chocolate, learning to peel a banana, discovering a zipper, flushing a toilet on the ship for the first time, carrying a samovar from the Ukraine and not much else, eating Jell-O at Ellis, seeing people chewing gum, watching an old man make a cross from tongue depressors, sharing cookies as a child with strangers at Ellis, eating white bread and butter, sneaking around the ship and stealing oranges from First Class. These are the recollection choices made by those telling their stories—right alongside those of breaking Kosher in order to survive, Armenians enduring against all odds, and every situation imaginable in which humans persevered to improve their lives with hope for their children.”

Epilogue: The continuing story of U.S. immigration

In 1952, the Immigration and Nationality Act abolished the Chinese Exclusion Act (1882) and the Asian Exclusion Act (1924), while retaining a quota system for nationalities and regions and establishing preference classifications. On October 3, 1965, President Lyndon B. Johnson stood at the foot of the Statue of Liberty and signed into law the Hart-Celler Act, eliminating national origin, race, and ancestry as immigration classifications; giving priority to relatives of U.S. citizens and other individuals with specialized skills; adding a labor cer-

tification requirement, and abolishing numerical restrictions for immediate relatives and “special immigrants.” Refugees received the seventh and last preference category with the possibility of adjusting their status; however, refugees could enter the United States by seeking temporary asylum.

Since 1965, several modifications to immigration law have occurred, including the 1986 Immigration and Control Act, which provided better enforcement of immigration policies and granted amnesty to more than three-million unauthorized immigrants.

The late twentieth and early twenty-first centuries ushered in the largest immigration wave in U.S. history. Beginning in the 1990s, nearly one million immigrants entered the country every year. According to Pew Research Center, the United States has resettled more refugees than any other country—nearly 3 million since 1980. In the past few years, the number of refugees annually resettled by the U.S. has not grown consistently with the world-wide refugee population, which has expanded nearly 50 percent since 2013.

Six Songs from Ellis, like immigration to the United States, is a continuing story, and Knight intends to build upon these early oral histories by bringing twenty-first century voices into the narration. “Surely their expression would parallel that of those in the past whose concerns and hopes are much the same,” says Knight.

Student Voices

Learning through performance

A senior studying dance performance, Baylee Butcher is from Loveland, Colorado. Butcher says that performing in *Six Songs* greatly improved her ability to tell stories. “We were embodying real people who immigrated through Ellis Island,” she notes, “and it was very important—not only to me but also to my fellow cast-mates—to be as authentic in that story telling as possible to honor the people whose stories we were sharing.”

Before *Six Songs*, Butcher says that she had very little knowledge about Ellis Island and immigration. “Working on the show didn’t change my perspective as much as it helped me to formulate my own thoughts on immigration,” Butcher comments. “The people who immigrated through Ellis Island are our ancestors and without them much of the culture we have in America today would be lost. America was also a place of refuge, a new beginning, for many

people who were escaping their war-torn homes. I believe that is what America is and should continue to be—a place where people can have a new beginning, and a place where people can share their many cultures with one another.”

When asked what the most important lesson she learned from performing in this production was, Butcher says, “I learned how important it is to educate yourself on historical events such as immigration through Ellis Island,” Butcher says. “Without this show, I may have lived my whole life without having the slightest idea about what many of the people who immigrated to America endured—not just in their travels but also in their home countries. The show opened my eyes to the resilience of the human spirit.”

Justen John-Andru Glover is a senior from Arvada, Colorado, majoring in musical theatre performance with a minor degree in psychology. He portrayed immigrants Michael Huysman, Max Mason, and John Babian. “The biggest acting challenge for me was trying to differentiate each person, but not in such a large way that they became caricatures,” says Glover. “Most important was to interpret the words as accurately and honestly as possible and then to add another personal layer on top of that.”

Glover says that his mother has family members who immigrated through Ellis Island, and he came into the production with a good understanding of the current immigration debate, as well as at least a cursory knowledge of Ellis Island. “Working on this production didn’t really change my views on immigration, but it certainly amplified them,” notes Glover. “When I came onboard with the project I wasn’t expecting it to touch me in the way that it did, and it really helped solidify for me that there is no reason why we, as citizens, should be afraid of immigrants when they are the ones who have made this one of the best countries in the world.”

“I think something substantial that this show helped remind me of is how important it is to examine history and attempt to not only learn from it, but empathize with it,” Glover says. “As we can see, immigration is a major issue that we’ve been dealing with for generations, and for us as to romanticize one period of immigration over the other is a problem.”

Aili Maeve McLellan, from Houston, Texas, is a senior majoring in musical theatre performance. In *Six Songs*, she played several people, including Mary (Maram) Ohanian Assadourian, an Armenian who immigrated to America after the Armenian massacre began. “Her family had, what they called, a ‘bee house’ or a building full of beehives,” explains McLellan. “During an attack, the Turks burned the bee house. Assadourian’s grandfather protested and they shot him. This oral history touched my heart because discrimination and prejudice can be so evil; it can destroy anything beautiful. I think it’s important to understand the magnitude of how destructive hate can be and how it can drive people away from their own homes to find freedom.”

A fascination with history led McLellan to read a great deal about the rise of the Nazi Regime, the Holocaust, and both World War I and II. Because of her interests, McLellan came into the *Six Songs* production with a good understanding of Ellis Island and the various reasons why families decided to migrate to the United States. She says that the most important lesson that she learned while working on this production is how easily history can be repeated.

“This production has furthered my standpoint on the importance of immigration,” says McLellan. “In the early 1900s, America was considered a ‘melting pot’ of diversity. We have blended cultures, ethnicities, religions, and nationalities to create the definition of what it means to be ‘American.’ Our country was built on the foundation of immigration and the search for freedom, and we’ve declared the United States to be the land of the free.”



Left to Right: Haley Nigro (B.F.A. theatre and dance 2018), Justen Glover, Aili McLellan, Becca Maniscalchi, and Hannah Kipp, a senior in theatre and dance from Cypress, Texas are pictured. (Andrews Photography)

Illuminating planet formation mysteries

Diana Marie Waggener

From a cloud evolves a solar system

Stars and planets originate within a collapsing interstellar cloud of dust and gas that exists inside a nebula—a larger interstellar cloud. Gravity pulls the contracting cloud's matter closer together, and, as the center becomes more condensed, it gets hotter. Within this fiery core, a new star is born.

As it continues to fold in on itself, the cloud begins to agitate, and, as it compresses more deeply, much of the cloud begins rotating in the same direction—similar to the way a pizza maker twirls the dough. Eventually the mass flattens into a disk, and it keeps spinning. The material inside the disk travels around the star in the same direction. As these small clumps orbit within the disk, they gather surrounding material and continue growing. Boulder-sized and larger chunks develop a modest amount of gravity, so they pull in dust and other clumps; the bigger these conglomerates become, the more material they pull into themselves. This is how “planetesimals” (small planets) begin to take shape.

Hundreds of planetesimals form at the same time, clearing out material in their paths and gathering slow-moving rubble and gas. Sometimes if one planetesimal crosses into another's course, they collide and send debris flying, but, if they slowly move toward each other, gravity will help them to merge into a larger object. Eventually, the debris in their respective paths grows thinner and each planetesimal course is relatively clear around its star. After millions of years, encounters between these planetesimals clear out much of the disk's debris and build larger and fewer objects that dominate their regions.

Once the original gas has been consumed and cleared out by the developing star, most of the material in the inner part of the disk is rocky, resulting in smaller, terrestrial planetesimals forming close to the star. Gas and ices remain in the outer part of the disk, and this matter allows planetesimals farther from the star to collect more material and evolve into ice and gas giants.

In fact, this final stage of planet formation is the subject of debate among astronomers who once assumed that the way our solar system developed, with its clean, circular orbits, and little rocky planets close to the Sun and larger gaseous planets farther out, also held true for other solar systems. Increasing evidence, however, indicates that our Solar System actually is not at all common, and other star systems are nothing like ours.

Surprise! The Milky Way Galaxy is home to many solar systems

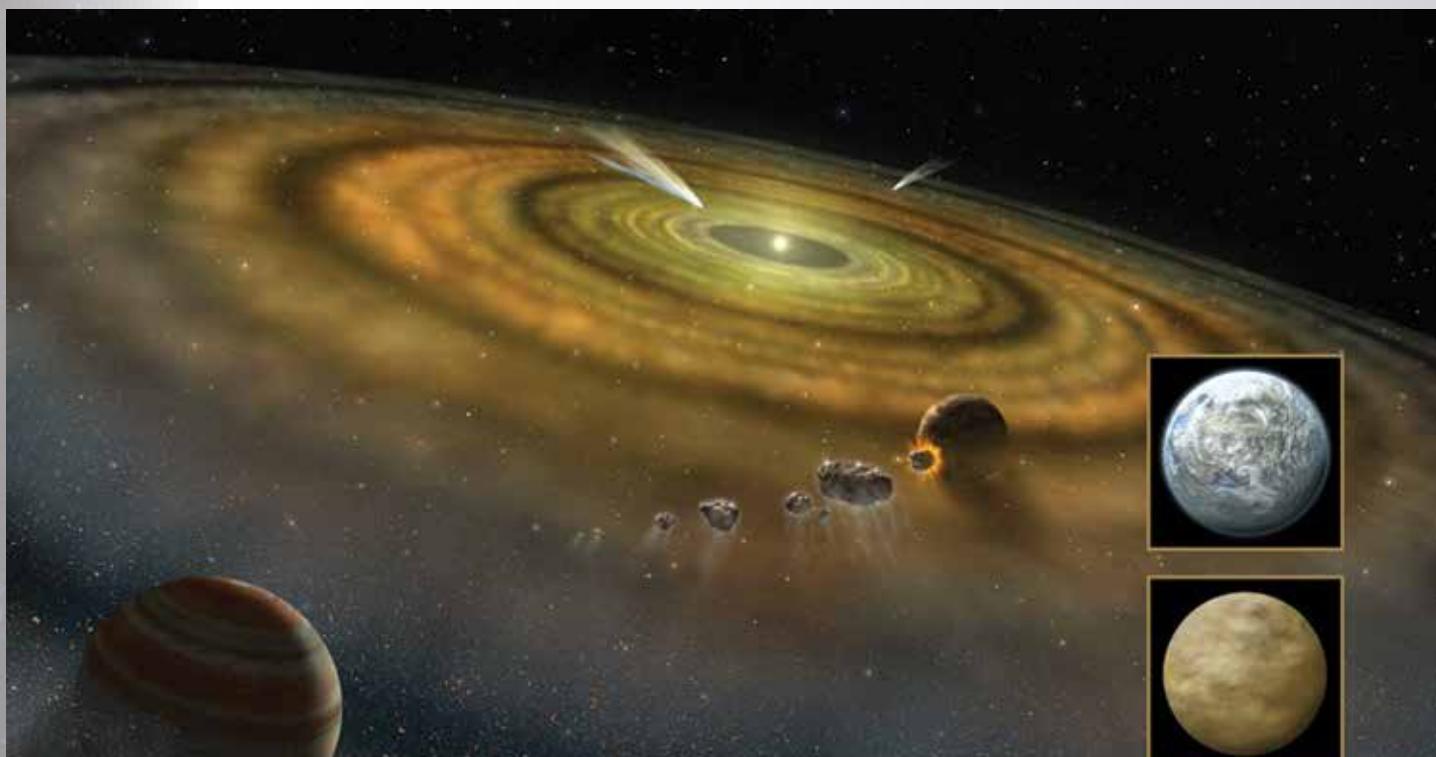
More than 3,500 exoplanets (planets orbiting stars, other than our Sun) have been discovered to date, and some have oval-shaped orbits, while others are wildly varied. Most systems orbit around relatively small and cool red-dwarf stars, unlike our solar system, which orbits around a G-type star (larger and hotter than the very common red-dwarf stars). In our solar system, the sun likely formed alone; whereas, other stars have companion stars, and these two-sun solar systems are not rare exceptions but likely common.

Astronomers have learned that many other star systems' large gas giants orbit close to their star, unlike our Jupiter, which circles approximately 484 million miles away from the Sun. They found other systems that are compact and occupy only a space of about 6 million miles—one-sixth the distance between the Sun and its nearest planet Mercury.

These differences lead to many questions about planet formation, and as astronomers explore the unknown, they consequently develop a better understanding of our own solar system and its place within the universe. Associate Professor Hannah Jang-Condell, Department of Physics and Astronomy, has established herself as one of the world's premier experts in planet formation, and she hopes to contribute to a body of evidence that explains the variance in planet formation.

Jang-Condell uses theory and computational modeling to determine how small chunks of rock and ice orbiting other stars eventually coalesce into actual planets. Specifically, her research investigates how planets form as a by product of star creation. "To better understand the distribution of planetary system characteristics, we need to understand how planets in these other star systems form," says Jang-Condell. "Studying young stars with active planet formation is a promising way to tackle this problem."

Continued on Page 18. . .



Scientists using NASA's Far Ultraviolet Spectroscopic Explorer (FUSE) have discovered abundant amounts of carbon gas in a dusty disk surrounding a star named Beta Pictoris (nearly 60 light years away from earth and 1.8 times more massive than our sun). This artist's concept depicts the circumstellar disk around Beta Pictoris and shows (in false colors) the light reflected by dust around the young star at infrared wavelengths. (Jean-Luc Beuzit, et al., Grenoble Observatory, European Southern Observatory, NASA/FUSE/Lynette Cook)



Scientists using NASA's Spitzer Space Telescope have collected detailed data on a gap in a protoplanetary disk surrounding a young star. This artist's concept illustrates one interpretation, attributing the disk gap to planet formation. At the center, a young star pulls material from an inner disk of dust and gas. The gap between this inner disk and the thick outer disk possibly is populated by developing gas giant planets. (NASA/JPL-Caltech)

Giant planet formation: Two theories

Astronomers have developed two opposing theories on giant planet formation. One theory, core accretion, asserts that solid particles in a protoplanetary disk—a thin structure consisting mostly of hydrogen and helium gas, typically with a vertical height smaller than the radius, and a mass much smaller than the central young star—continuously merge into larger bodies until a core big enough to accrete a gaseous envelope materializes on time scales of millions of years. Disk instability, on the other hand, argues that the disk crumbles into a self-gravitating giant planet within tens of thousands of years.

“In either case, the planet eventually becomes massive enough to clear a gap in the disk,” notes Jang-Condell. “If the disk is heated by starlight, a shadow will form in its gap. The shadow will cool while the far side of the disk will heat up and expand by illumination. These gap shadows have been observed in some disks around young stars, so we can predict the relation between planet properties and gap features, allowing a direct probe of planet formation as it is occurring.”

From the protoplanetary disk phase to the debris disk phase

Because they form when gas amounts are still abundant within the disk, giant gas planets develop during the protoplanetary disk phase. “As stars age, these gaseous disks dissipate,” explains Jang-Condell. “Nonetheless, many young stars are still left with dust around them, as observed from the infrared excess in their spectral energy distributions. These older dusty disks are generally gas-depleted or gas-free and appear to be the result of collisions between larger planetesimals. During this epoch, terrestrial planets may be forming, and they are referred to as debris disks.”

Some protoplanetary disks show evidence of inner holes, which may be partly caused by planets inside or near those holes. These disks are called transitional disks, because they may represent the “missing link” between the protoplanetary and debris disk phases.

“Several of these transitional disks show a high degree of variability in the infrared, varying by 0.5 magnitudes over a time scale of about a week, as seen with the Spitzer Space Telescope,” notes Jang-Condell. “Since infrared emission comes from thermal emission of the dust, this implies that the thermally emitting regions of the disk are changing on time scales that are shorter than the dynamical time—time and time-scale are defined implicitly and inferred from the observed position of an astronomical object via a theory of its motion—typically on the order of many years.”

A few of these transitional disks also exhibit “seesaw” behavior, where the near- to mid-infrared emission increases while the far-infrared decreases, and vice versa. This phenomenon can be explained by material close to the star obscuring the outer disk, which is referred to as a shadow. In other words, when a planet crosses its face, the star will show a tiny decline in light.

To properly study the origins of infrared variability in transitional disks, Jang-Condell looks at the structure of the inner hole, predicts the extent of disk shadowing from material in the hole, models the spectral energy distribution (SED) and other observable characteristics of the disk, and then models how the disk will change over time.

How planets, planetesimals, and debris disks interact with their host stars governs the nature of planetary systems. Some

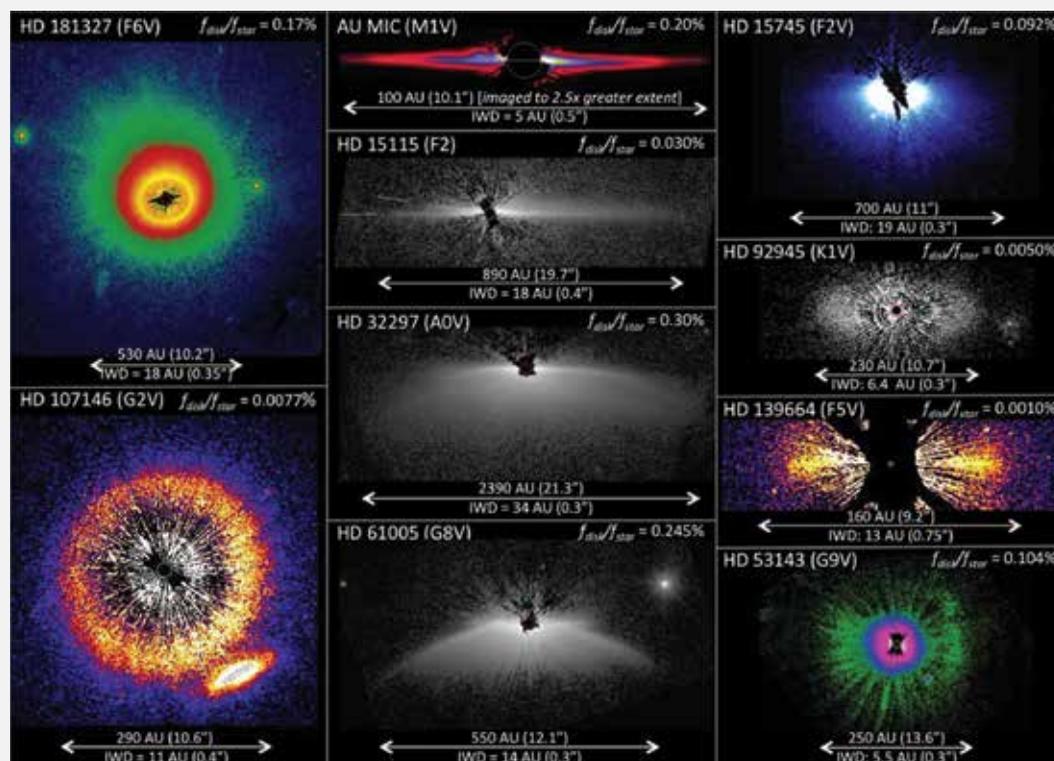
astronomers have found that giant exoplanets that orbit far away from their stars are more likely to be found around young stars that have debris disks than those that do not. Jang-Condell notes, however, that this understanding is not conclusive.

“One project I have done is to predict what disks would look like if there were a giant planet forming in it,” says Jang-Condell. “In another project, we show how the disk might appear at optical wavelengths (about 1 micron) versus mid-infrared (10 to 30 microns) versus sub-millimeter wavelengths (100 to 300 microns).”

In optical wavelengths, light scattering off the surface of the disk, as well as a shadow tracing the gap created by the planet, can be seen. In mid-infrared wavelengths, the heating and cooling of the disk resulting from the illumination and shadowing of the disk is visible. In the sub-millimeter, the disk is transparent, as opposed to just the clear top surface layer, making the disk appear more flat. Larger planets create larger gaps, therefore, by measuring these gaps, Jang-Condell can potentially determine the mass of planets being born in disks.

“One example of this application is in the star TW Hydrae [see Page 21],” explains Jang-Condell. “When we image the disk with the Hubble Space Telescope, there appears to be a gap-like structure in it at 80 au [astronomical unit], similar to my predictions.

Continued on Page 20. . .



These images of gas-free debris disks taken by the Hubble Space Telescope, reveal a wealth of structure that hint at planets carving out disks. No two disks of material surrounding stars look the same. Irregularities observed in the ring-like system around the star HD 181327 (top, far left corner) look like the ejection of a huge spray of debris into the outer part of the system as the result of a recent collision of two bodies. The take-away from this small sample is the diversity of the architecture of exoplanetary systems—planets arranged in orbits very different from our solar system. (NASA, ESA, G. Schneider University of Arizona, and the HST/GO 12228 Team)

In fact, by comparing my models to these observations, we predict that this gap could be created by a planet that is six to 20 times the mass of the Earth, or roughly 1/3 to 1.3 times the mass of Neptune.”

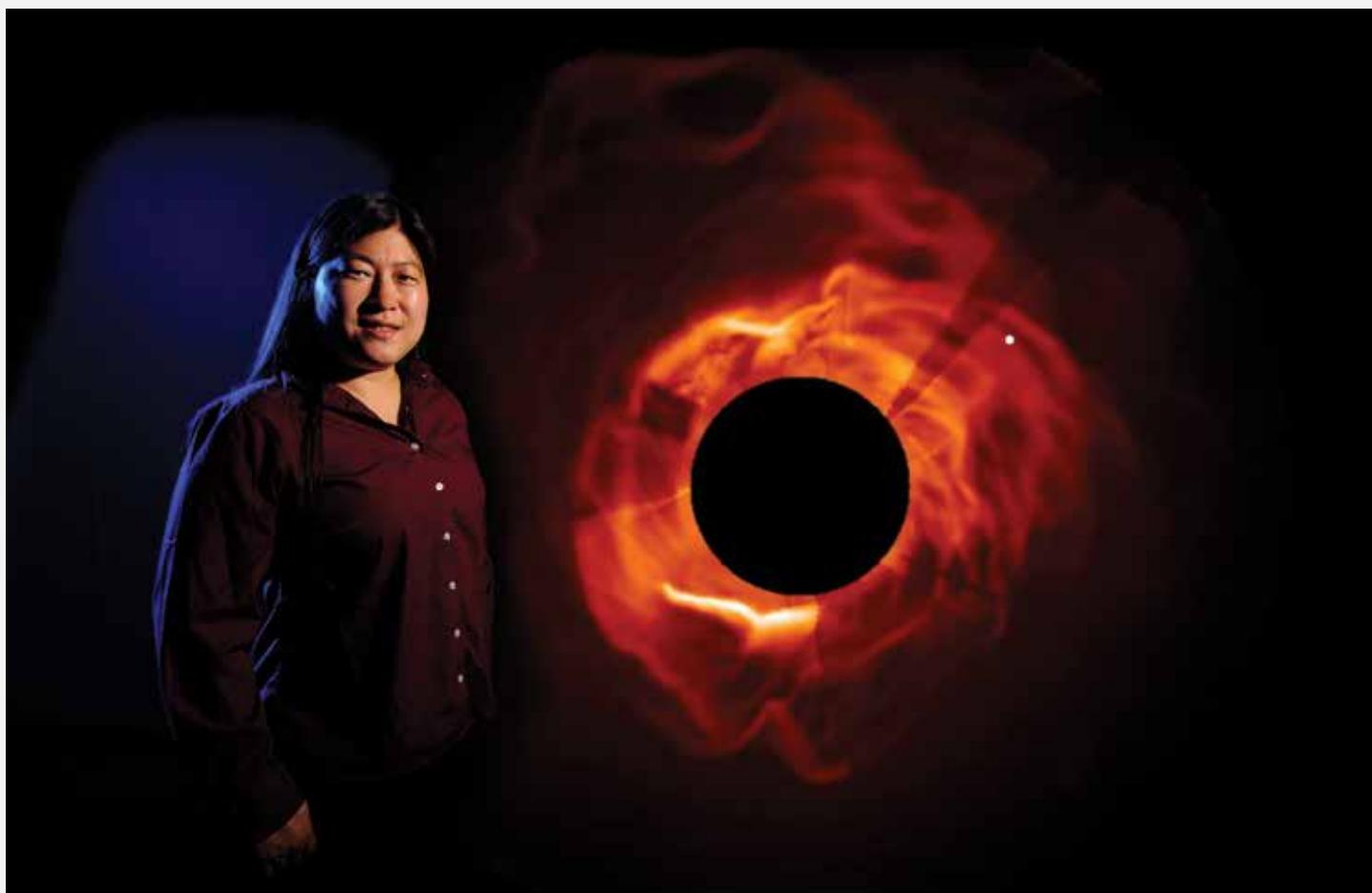
This would indicate a planet forming at 80 astronomical units (approximately 93 million miles), which is twice Pluto’s distance from the Sun. “It’s still a mystery as to how a planet can form from that big of a distance from its star, so there’s definitely more research to be done,” notes Jang-Condell.

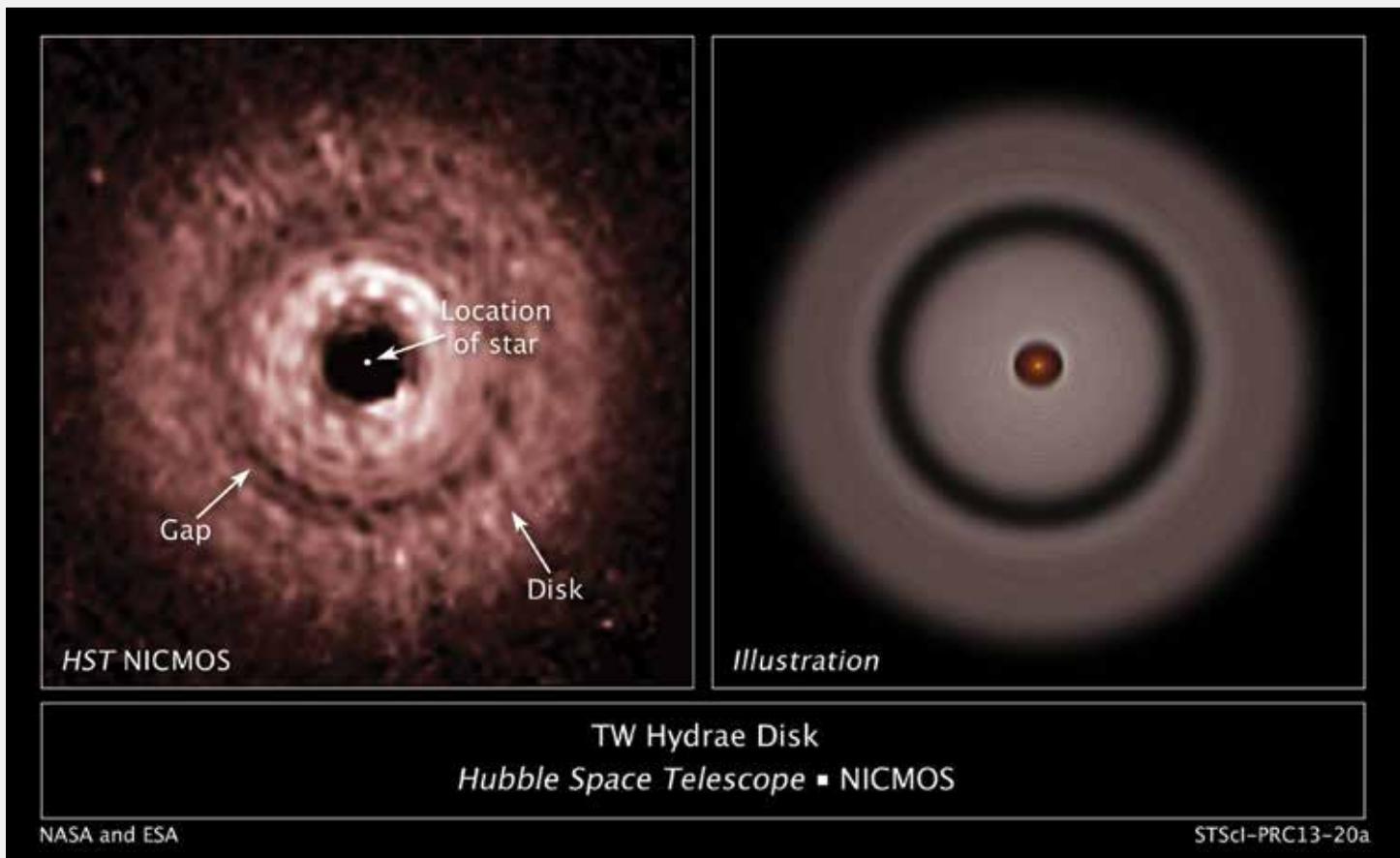
Planet formation research and its relationship with NASA’s objectives

Essentially, Jang-Condell focuses on better understanding how planets form and evolve, helping to answer questions that are important to comprehending the universe, in general, and identifying the frequency of planets, including habitable planets, around stars in the Galaxy. These goals address NASA’s Strategic Objectives of “Discovering the Secrets of the Universe” and “Searching for Life Elsewhere,” as laid out in the *NASA 2018 Strategic Plan*.

Exoplanet studies, including research into planet formation, stands at the boundary between the Planetary Science and Astrophysics divisions within the Science Mission Directorate (SMD). According to the 2014 SMD Science Plan, “NASA’s strategic objective in planetary science is to ascertain the content, origin, and evolution of the solar system and the potential for life elsewhere,” and “NASA’s strategic objective in astrophysics is to discover how the universe works, explore how it began and evolved, and search for life on planets around other stars,” including “Exploring the origin and evolution of the galaxies, stars and planets that make up our universe.”

Jang-Condell’s research directly speaks to the question of planet formation. “Specifically, my work addresses the goal of understanding the origins of exoplanetary systems,” she explains. “Our project will be particularly helpful in interpreting images of protoplanetary disks being currently obtained with the Hubble Space Telescope, as well as those that will be seen with the James Webb Space Telescope and WFIRST.”





Taken on June 9, 2005, the above Hubble observation reveals a gap in a protoplanetary disc of dust and gas whirling around the nearby red dwarf star TW Hydrae. The gap's presence is believed to be the result of the effects of a growing, unseen planet that is gravitationally gathering material and carving out a lane in the disc.

At top left, In the NASA/ESA Hubble Space Telescope image reveals a gap that can be seen about 12 billion kilometers away from the star in the center of the disc. The image was taken in near-infrared light by the Near Infrared Camera and Multi-Object Spectrometer (NICMOS) to block out the star's bright light so that the disc's structure could be seen. The graphic at top right shows the gap relative to the star. TW Hydrae resides 176 light-years away in the constellation of Hydra, The Sea Serpent. (NASA, ESA, J. Debes, STScI; H. Jang-Condell, University of Wyoming; A. Weinberger, Carnegie Institution of Washington; A. Roberge, Goddard Space Flight Center; and G. Schneider, University of Arizona/Steward Observatory)

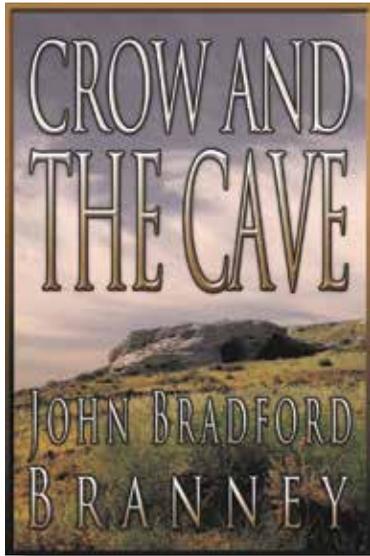
At left, Hannah Jang-Condell poses for a photo beside one of her planet formation models. (UW Photo)

The NASA/ESA Hubble Space Telescope captured an almost face-on view of a swirling disk of dust and gas surrounding a developing star

named AB Aurigae (below). The Hubble telescope image, taken in visible light by the Space Telescope Imaging Spectrograph, shows exceptional detail in the disk, including clumps of dust and gas that may be the seeds of planet formation. (C.A. Grady [National Optical Astronomy Observatories, NASA/ESA Goddard Space Flight Center], B. Woodgate [NASA/ESA Goddard Space Flight Center], F. Bruhweiler and A. Boggess [Catholic University of America], P. Plait and D. Lindler [ACC, Inc., Goddard Space Flight Center], M. Clampin [Space Telescope Science Institute], and NASA/ESA, P. Kalas [Space Telescope Science Institute])



A&S Bookcase

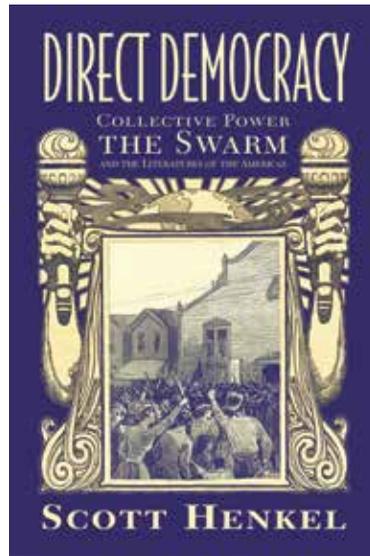


Crow and the Cave

John Bradford Branney
(B.S. Geology 1977)
Black Rose Writing, 2018

In John Bradford Branney's eighth novel, he returns to Prehistoric America where readers will find the familiar landscape and characters from three previous works, the *Shadows on the Trail* Trilogy. *Crow and the Cave*, however, was inspired by a life-threatening event experienced by Branney.

In December 2016, Branney and his German Shepherd Madd Maxx were searching for prehistoric artifacts on an isolated ranch on the high plains of the Rocky Mountains when a herd of Corriente cattle brutally attacked the dog, and then his master. Eventually, first responders airlifted Author Branney to a trauma center in Colorado while Madd Maxx was rushed to an emergency veterinarian clinic. Branney and Madd Maxx survived the life-threatening ordeal with serious injuries, and they both endured long-term, intense recoveries. Branney wanted to document the experience, as well as his state of mind, so he fired up the time machine, dialed up 8700 B.C., and produced an adventure in Prehistoric America.

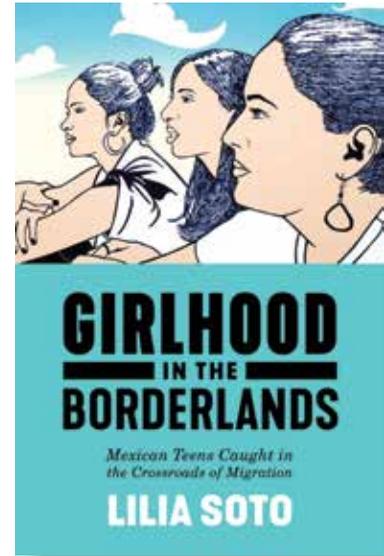


Direct Democracy: Collective Power, the Swarm, and the Literatures of the Americas

Assistant Professor Scott Henkel
Department of English
University Press of Mississippi, 2017

Beginning with the Haitian Revolution, Assistant Professor Scott Henkel describes a literary history of direct democracy in the Americas. Henkel interprets direct democracy as a type of collective power. In the representations of slaves, women, and workers, Henkel traces a history of power through the literatures of the Americas during the nineteenth century.

Thinking about democracy as a type of power presents a challenge to common and limited understandings of the term and opens an alternative archive, including C. L. R. James' *The Black Jacobins*, Walt Whitman's *Democratic Vistas*, and Lucy Parsons' speeches advocating for the eight-hour workday. Henkel asserts that these writers and others recognized this power and represented its physical manifestation as a swarm—a metaphor that assumes a complicated history, often describing a group, a movement, or a community. This metaphor illustrates Henkel's main concerns—democracy, slavery, and labor; dynamics of racial repression and resistance; and power issues throughout the Americas.

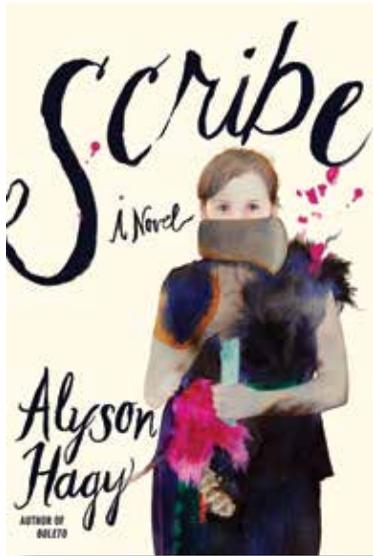


Girlhood in the Borderlands: Mexican Teens Caught in the Crossroads of Migration (Nation of Nations)

Associate Professor Lilia Soto
Department of History and American Studies
NYU Press, 2018

Associate Professor Lilia Soto explores the lived experiences of Mexican teenage girls raised in transnational families and the varied ways they make meaning of their lives. Under the Bracero Program and similar recruitment programs, Mexican men have, for decades, been recruited for temporary work in the U.S., leaving their families for long periods of time to labor in the fields, factories, and service industry before returning home again. While the conditions for these adults who cross the border for work has been extensively documented, very little attention has been paid to the lives of those left behind. Over a six-year period, Lilia Soto interviewed more than 60 teenage girls in Napa, California, and Zinapécuaro, Michoacán.

As they develop, these Mexican teens find commonality in their fathers' absence and the historical, structural, and economic conditions that led to their movement. Tied to the ways U.S. immigration policies dictate the migrant experiences of fathers and the traditional structure of their families, many girls develop a sense of time-lag, struggling to plan for a present or future.



Scribe

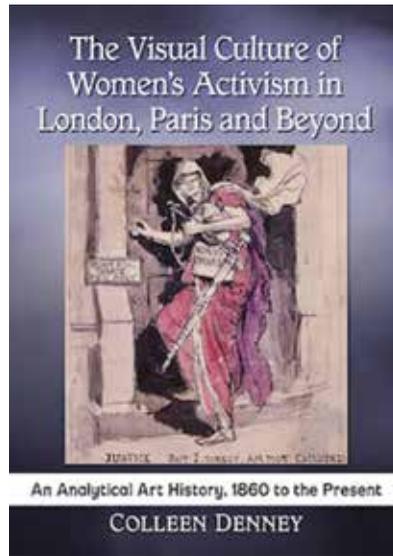
Professor Alyson Hagy

Department of Visual and Literary Arts
Graywolf Press, 2018

In *Scribe*, Professor Alyson Hagy portrays the aftermath of a brutal civil war that has ravaged the country while contagious fevers have decimated the population. Abandoned farmhouses litter the isolated mountain valleys and shady hollows, and the economy has been reduced to barter and trade.

Within this bleak, unwelcoming world, the central nameless character ekes out a lonely living on the family farmstead where she was raised. She has learned how to make papers and inks and has become known for her letter-writing skills, which she exchanges for scarce resources. An unusual request for a letter from a man with hidden motivations unleashes the ghosts of her troubled past and sets off a series of increasingly disastrous events that culminate in a harrowing journey to a crossroads.

Drawing on traditional folktales and the history and culture of Appalachia, Hagy tells a fascinating tale that touches on pressing current issues and makes a compelling case for the power of stories to both show us the world and transform it.



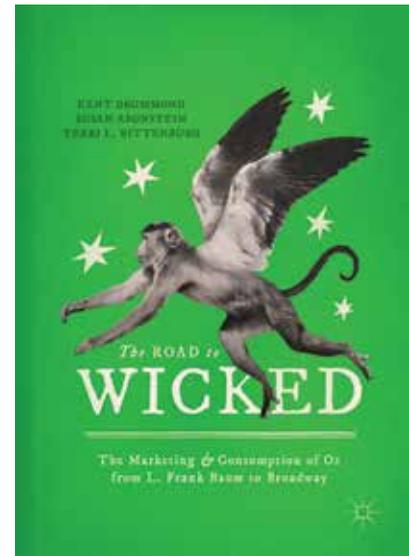
The Visual Culture of Women's Activism in London, Paris and Beyond: An Analytical History 1860 to the Present

Professor Colleen Denney

School of Culture, Gender, and Social Justice
McFarland & Company, Inc., 2018

Worldwide and throughout history, women's bodies have been found at the center of every women's rights debate. Professor Colleen Denney analyzes the domains of public and private space—and the interstices between them—with a focus on how women advance in the public arena by drawing on domestic politics of the private realm in their drive for social justice, equality, and citizenship. While concentrating on the visual culture of first-wave feminists in Edwardian England with a comparator analysis (where appropriate) on feminist developments in France, this book also visually illustrates women's activist work across the globe in the late twentieth and twenty-first centuries. These modern feminist movements are discussed within the context of how they continue to honor first-wave suffrage history.

Those who are interested in women's studies, cultural studies, history, and social justice will want to have this book in their library.



The Road to Wicked: The Marketing and Consumption of Oz from L. Frank Baum to Broadway

Associate Professor Kent Drummond
UW College of Business

Professor Susan Aronstein

Department of English
Professor Emerita Terri L. Rittenburg
UW College of Business
Palgrave Macmillan, 2018

The Road to Wicked explores the long life of the Oz myth within the framework of both cultural sustainability—the capacity of artists, narratives, art forms, and genres to remain viable over time—and the marketing machinery and consumption patterns that make such sustainability possible. Drawing on the fields of macromarketing, consumer behavior, literary and cultural studies, and theories of adaptation and remediation, the authors consider key adaptations and extensions of Baum's 1900 novel. These extensions include the original Oz craze, the MGM film and its television afterlife, the Broadway musical *Wicked* and its extensions, and *Oz the Great and Powerful*—Disney's recent adventure that builds on the considerable success of *Wicked*. At the end of the book, the authors offer a foundational framework for a new theory of cultural sustainability and propose a set of explanatory conditions under which any artistic endeavor might achieve it.

A&S Outreach and Engagement

Taking art on the road

As a faculty member, I appreciate connecting my teaching responsibilities, studio practice as an artist, and land-grant responsibilities.

~ Professor Mark Ritchie, Department of Visual and Literary Arts

Among the many ways that Professor Mark Ritchie unites his teaching and life as an artist with the land-grant mission is by offering numerous outreach events across the state. In fall 2017, he and two of his students shared the art of printmaking in Rawlins public schools and at ArtBeat!, the first annual Rawlins art festival.

ArtBeat! was organized by the Uplift Artists Guild and the Rawlins Downtown Development Authority. Based on the premise that “the Arts are at the heart of communities and engage communities,” the event took place on September 22 and 23, 2017. Downtown businesses partnered with local and regional artists to showcase individual artists’ work, while highlighting their processes with classes, demonstrations, and opportunities to meet the artists.

Jamie Chapman (B.F.A. art 1997), art instructor at Rawlins Middle School, invited Professor Mark Ritchie, Department of Visual and Literary Arts, to bring the portable press to the downtown events, and Ritchie offered to spend time at the public schools, as well. “Mark makes a huge effort to demystify what is really a very complicated art process,” says Chapman, who previously has taken printmaking workshops from Ritchie. “I never had any doubt that he’d be fabulous for our students and our community in sharing his love for this art form.”

Two Department of Visual and Literary Arts students, Jandey Shackelford (a senior from Sheridan) and Tori Pike, (B.A. art education 2018) agreed to join Ritchie for a day of making art in Rawlins. “The experience assisting Mark Ritchie in teaching at the Rawlins schools and in their community was and is so valuable to me,” says Shackelford. “It taught me about children—and even myself. It impacted me by helping me to learn how to communicate with children and others about art and in printmaking. Communication with others is so valuable to the process of art-making and art-interest.” Shackelford now is certain that she wants to teach when she graduates.

To get ready for this day-long adventure, a great deal of groundwork was needed. “To prepare for our involvement with ArtBeat!, printmaking students constructed ‘a library’ of simple wood blocks and devised a registration system that would allow individuals without printmaking experience, as well as younger children, to use relief printmaking processes and work with color layers of printed ink to make an image,” explains Ritchie. “Students in Intermediate and Advanced Printmaking classes helped premix colored transparent inks. Shackelford, Pike, and I fashioned a packaged approach to relief printmaking that could be done in a 20- to 30-minute class period, while maintaining the integrity of the process and experience.”

Early Friday morning, September 22, 2017, Ritchie, Shackelford, and Pike loaded up ink, paper, a portable press, prepared materials on jump drives, and plenty of energy and headed to Rawlins. Shackelford and Pike each spent half of the day speaking to Rawlins High School students in Roger Davidson’s art classes. They presented their studio work and shared their personal experiences as college students. “UW students have always made a great impact on my students,” says Davidson, “opening doors to what can happen if they allow themselves the opportunity to learn.”

Shackelford and Pike spent the second half of the day at Rawlins Middle School with Ritchie, introducing color relief printmaking to Chapman’s very excited students. “I believe our presence in the classroom gave these young students an opportunity to hear artist and student-artist voices who represent Wyomingites identifying as artists,” notes Ritchie, “while providing evidence of the meaning and place of art and education to Wyoming residents.”

Later that afternoon and into the evening, Ritchie, Shackelford, and Pike participated in ArtBeat! at Red Desert Arts, owned by retired art educator Marge McCrea.

“Many students who we met earlier in the day brought their friends and family to see what they had learned in class,” says Ritchie. “The enthusiasm for art was contagious.”

Besides printmaking, Artbeat! highlighted every possible art form, from leather-making, chainsaw sculpting, and fiber weaving to more traditional media, including painting and drawing. Chapman estimates that more than 200 people participated in the printmaking process. “By 8 p.m., Shackelford, Pike, and I were exhausted, but we all agreed that it was worth it to be part of events that made the arts so accessible and relevant to students, as well to the Rawlins community,” comments Ritchie. “In particular, we were pleased to share a less-well-known artistic process like printmaking.”

Impacts to middle school students

“I didn’t know that you could blend the colors in printmaking like that—having a shape, like a circle, being yellow-gold, with orange and then red and blue—the color mixing was incredible. I also really like learning how to use the big presses. Our press [at school] is like a postage stamp in comparison. Their [UW’s] press was huge, and it was cool to have the UW students and teacher to help us.”

-Ali, eighth grade

“I seriously want to take art in college because of this experience. I didn’t know that you could go to school to study something like this!”

-Josh, eighth grade

“Mr. Mark was really nice! He made it all look so easy. We got to make more prints in our art class [the week after] and I felt like I understood how to do it a lot better because of having them [Mark Ritchie and his students] show us earlier. I never realized people could do this for a job!”

-Tru, sixth grade



Jandey Shackelford and Professor Mark Ritchie take time for a photo during a printmaking workshop with middle school students.

(Photo courtesy of Mark Ritchie)

“The printmaking project was an exciting project that engaged the students. Not only did the students love the hands-on experience of the printmaking process but they were excited about the results and the art that they had created. I got to participate with the students and they made extras for me, which I mounted and have hanging in my office. Students and staff always remark on them and it’s become a conversation piece in the counselor’s office.”

-Mr. Josiah Peck, Rawlins Middle School Counselor

A&S Outreach and Engagement

Service learning brings Chinese language and culture to Wyoming high school students

Senior Lecturer Yan Zhang, Chinese Program Director, Department of Modern and Classical Languages

Among the values documented in the UW Strategic Plan are diversity and internationalization. The Chinese program, housed in the Department of Modern and Classical Languages, develops in its students a strong understanding of Chinese language and culture, while preparing them to interact well on the global stage.

*Isn't it also great when friends visit from distant places?
-Confucius*

To advance intercultural connections, the Chinese program uses comprehensive, stimulating, and interdisciplinary courses, as well as an extracurricular component of service learning. Since 2002, the Chinese program has successfully enhanced its students' intercultural competence in Chinese and area studies, preparing them for careers and engaged citizenship in communities in the United States and around the world.

During the 2017-2018 academic year, I teamed up with language instructors Tingting Wofford (Thunder Basin High School and Campbell County High School in Gillette) and Dianne Thompson (Laramie High School) to conduct workshops with their students.

As part of the extracurricular service learning component, students in the UW Chinese minor program, Meagan Barnes, Megan Brown, and Jade Schumacher, traveled with me to Gillette in November 2017. We met roughly 50 students at Thunder Basin High School in the morning, and, in the afternoon, we met a couple dozen students at Campbell County High School.

*Isn't it a pleasure to study and practice what you have learned?
-Confucius*

After briefly communicating in Chinese with the high school students, Barnes, who is a graduate of Campbell County High School, talked about UW academic programs and scholarships and shared her experiences during her first semester studying at UW. Schumacher talked about the Department of Modern and Classical Languages programs—in particular the Chinese minor program. Finally, Brown introduced the high school students to

the Associated Students Interested in China (ASIC), UW's Chinese club. She described ASIC campus events and ASIC community service, both in Laramie and in China.

I discussed the UW nine-week Summer Study Abroad program and presented images of students' experiences in China. After the team presentation, I then taught six short Chinese courses designed to strengthen what the students learned and to arouse their passion to continue studying Chinese at UW. At the end of each class, we gave students small promotional gifts with the UW Chinese program logo. I think the students loved the gifts and many showed a strong interest in attending UW in the future.

*Education breeds confidence. Confidence breeds hope.
-Confucius*

In February 2018, Chinese language students, including Barnes, Jonet Jennings, Steven Le Blanc, and Monica Olson, helped me to organize a "4C" Workshop: Chinese Cultural Cross Connection for Laramie High School. The workshop opened with Jennings who shared her study abroad experience in China. She discussed how UW students worked with underprivileged children to learn English and American singing and dance. She also described internship opportunities at the Harbin TV and Broadcast Station and how UW students hosted a table representing the United States at an international festival and introduced America and UW to local residents of Harbin.

Second, because the workshop was hosted during the Chinese New Year Festival, Le Blanc discussed Chinese New Year traditions such as the red envelopes that contain cash gifts given by senior family members to their junior relations, lion and dragon dances intended to bring good luck, and pyrotechnics. We then helped the students make traditional Chinese red knots, a sign of good fortune for the New Year. Jennings, Barnes, and Olson helped the high school students write lucky Chinese characters in traditional Chinese calligraphy using the customary writing brush. The students all left the workshop with greater knowledge about Chinese culture.

Impacts on UW students

“I am a second year Chinese student at UW. I also am the vice president of Associated Students Interested in China so I am no stranger to recruiting events here at UW, but I must say I had a wonderful time visiting with the students of Gillette! It was amazing getting to talk to high school students who are genuinely interested in the possible programs they could take at UW. I was amazed at how many of them already knew quite a lot of Chinese and weren't shy to show it—the groggy morning classes being the exception! It was a long day of non-stop presentations on our end but it was extremely worth it; I'm sure we grabbed the interest of many students who are getting ready to step into the world of college, and what's even better is that we got to answer questions and help those students forge a path to the best university around—UW, of course. I can't wait to see how the programs in Gillette expand and intertwine with UW in the future.”

~Megan Brown (蒲美琳), Art Major

“My community engagement experiences through the UW Chinese program have certainly helped me to grow both personally and professionally. I feel fortunate to attend a university where the emphasis on this sort of leadership development is strong. I am confident that the opportunities offered by the UW Chinese program in the future will continue to develop students' personal, professional, academic, and global perspectives.”

~Steven Le Blanc (罗嘉辉), Anthropology Major

“I extremely enjoyed the volunteer school trip. We were able to go into high schools and talk about China's culture and the Chinese language. Though it is always fun to learn a new language, the best part of coming to learn a culture is exploring the similarities between the countries. Just as the students at University of Wyoming have come to love and treasure the Chinese traditions and values, we hoped to also begin planting that seed in these high school students. They seemed to

enjoy the unique experience, and some students even expressed their interest in possibly pursuing a Chinese minor. Though we are separated by a vast ocean, we still have much in common that connects us across the globe.”

~Meagan Barnes (白美安), Psychology Major

“Recently visiting Laramie High School with the Chinese Club made me realize that student interest in world cultures is growing. Most students who came to our workshop were already taking a foreign language, and the look of amazement on the students' faces was something that made me more thankful to be teaching and exploring with them, even though it was just the basics. Every student in the room—all 30-plus of them—was smiling by the time they left the classroom. It's a feeling of accomplishment and joy, especially since we were just high school students ourselves a few years ago. I'm excited to get out into the community more and teach them about the great wonders of the Chinese language and culture. I will gladly keep doing what I'm doing if it means seeing more smiles and expanding more spirits and knowledge.”

~Monica Olson (欧梦杰), Journalism Major

“Doing any type of community service is always good. What made my trip to Laramie High School special is the fact that I got to share my passion with others. I taught some Laramie High Schoolers the joys of the Chinese Spring festival. I was also able to use my language ability to inspire a bunch of them to pursue language. I was around their age when I started learning Chinese so it was amazing to see that passion again.”

~Jonet Jennings (翟美慧), Political Science and International Studies Major

A&S Alumna Profile



Photo Courtesy of Anne Mason

Laramie native and A&S alumna Anne Mason (B.F.A. Theatre and Dance 2011) is living proof that choosing a career that you love, identifying opportunities, working hard, and fostering community are perfect ingredients for success. Mason is the producing artistic director of Relative Theatrics, a performing arts company, partly funded by the Wyoming Arts Council and the National Endowment of the Arts, which brings a full season of six contemporary plays to the Laramie community each year. “I have always loved Laramie, but while growing up, I rarely had opportunities to

attend high-quality, thought-provoking, contemporary theatre outside of the university,” explains Mason. “Toward the end of college, I was under the impression that a theatre career in Laramie was unattainable.”

After working with professional companies across the United States, including an acting and artistic director apprenticeship with Capital Stage Company in Sacramento, California, Mason came home in 2013. “When I returned to Laramie to teach a few courses in beginning acting for non-majors at UW, I also tried my hand as a producer and founded Relative Theatrics,” Mason says. “After two years of running the company during my off hours, I took the plunge, acquired nonprofit status for the organization, and made Relative Theatrics my full-time endeavor.”

While her education and professional work experience prepared Mason to *create* theatre, the business side—budgeting, fund raising, networking, diversifying revenue sources, filing state taxes, applying for non-profit status, working with a board of directors, issuing contracts and agreements for artists and independent contractors, and marketing to specific demographics—presented a challenge. Mason took advantage of resources available from organizations like the Wyoming Women’s Business Center, the Wyoming Small Business Development Center, and the Wyoming Technology Business Center to learn how to manage a company.

“Starting and running a theatre company in a niche market, such as Laramie, is a great challenge, but it is equally rewarding,” says Mason. “Many obstacles accompany building a professional nonprofit performing arts organization in a community that has not had one before. There is a smaller talent pool to hire from and a greater need for public education about the work and the ways in which it is funded and created; however, the influx of community support and appreciation for the work fills me with a great sense of purpose. I truly believe in the mission of Relative Theatrics.”

Dedicated to presenting thought-provoking theatre that examines the qualities that connect the human race, Relative Theatrics is located in the historic Gryphon Theatre of the Laramie Plains Civic Center. The “Black Box” setting for Relative Theatrics productions leads audiences to fully engage in each performance.

Most of the plays strongly focus on character relationship dynamics and feature between two and four actors. To create the intimacy necessary for patrons to completely enter into the story, each production limits attendance to 50 audience members who sit on stage on three sides of the actors, forming a three-quarter thrust. This immersion aspect creates an environment in which patrons may develop a connection with the play’s characters or a strong reaction to the play’s themes. So each performance is followed by a “chat-back” session with the cast and director to begin a dialogue around feelings about and reactions to the play. “Witnessing the impact of this vision on our patrons, the dialogue our work inspires, and the empathy theatre cultivates is more than enough fuel to navigate the rough waters of uncharted territory,” Mason says.

In addition to its full season, Relative Theatrics produces a monthly play-reading discussion series, *Read, Rant, Relate—Igniting Conversation through Theatre*, which is held in a classroom in the Civic Center. This discussion series has been funded by the Wyoming Humanities Council in seasons 2015-16, 2016-17, and 2017-18. “Taking artistic risk, we provide a community gathering place where thoughts can be exchanged about society, culture, and the power of creativity,” notes Mason.

Mason believes that her UW education is at the core of her achievements. “While much of the administrative aspects of my work with Relative Theatrics were acquired after graduating from UW, none of the success would be possible without an incredibly strong theatre training foundation, knowledge of the craft, and the hard work, ambition, and discipline cultivated during my studies at UW,” she says. “I learned early on in my undergraduate career that outside class application was necessary to excel in my courses, on stage, and in my future career. My mentors and professors challenged me to expand my thinking and to fully apply myself in all aspects of my work. All of these lessons were strengthened by the on-stage opportunities that UW provided. I graduated with a stacked

résumé of varied theatre roles, a rich understanding of the art form, and the skills to push myself toward excellence in all components of employment.”

Relative Theatrics often employs Department of Theatre and Dance students, providing them opportunities to build their résumés before pursuing professional careers. In addition, Mason connects with UW departments and colleges when working on productions that relate to their fields of study and expertise. In spring 2017, Relative Theatrics presented a regional premier of *What Would Crazy Horse Do?* by Larissa FastHorse. “In preparation for this production, we connected with Keepers of the Fire, a UW Recognized Student Organization, as well as American Indian Studies professors,” says Mason. “The show benefited drastically from their cultural insight, traditional knowledge, and contacts within the Native community in Wyoming.”

Keeping in mind that theatre is a communal art form, Mason has nurtured programming partnerships with a long list of UW academics, including Senior Lecturer Laura DeLozier, Department of Modern and Classical Languages, who offered a reading of *The Arsonists* by Jacqueline Goldfinger in conjunction with a Greek Tragedy course in the spring 2018.

This fall, Mason partnered with an upper-division mammalian genomics course taught by Associate Professor Brian Cherrington, Department of Zoology and Physiology, for the newly formed UW Honors College. “This partnership integrated a production of Caryl Churchill’s *A Number*, a play which addresses the ethics of cloning, into the coursework for the class,” notes Mason. “This is an opportunity to strengthen university-community ties and to give students insight into how their studies are applied in a non-academic realm.”

In addition to her tireless work with Relative Theatrics, Mason returned to the UW campus this fall as a guest lecturer for the Department of Theatre and Dance. “I hope that my presence on campus will allow for stronger collaborations and partnerships between Relative Theatrics and the university,” Mason says.

To learn more about Relative Theatrics, go to: www.relative-theatrics.com/



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