FACULTY DEVELOPMENT GRANTS - SUMMARY
ACADEMIC YEAR 2021-2022

School of Arts, Education, and Humanities

Project Title: "Most Potent Art" – A Novel
Faculty Investigator Name: Brinda Charry
Faculty Investigator Department: English
Amount Awarded: $2,487

This novel-length fiction is based on two professional Indian conjurers/ magicians who sought success on the Boston, Philadelphia, and New York stages. It sets their story against the larger political context: in India, the growing imperial control of the British East Company; in the United States, the growing embrace of republicanism, the transport of freed African-Americans back to Africa, and the Missouri Compromise (a federal legislation that stopped the northern states attempts to limit the expansion of slavery). The novel will address themes of Indian identity, belonging, and loss in America, particularly the perceived identity of Indians as people of color not of African descent. It will also explore American stage magic in the early 1800s with a focus on magic as entertainment, as trickery, and as, in some cases, deliberately blurring the lines between stagecraft, the sublime, and the spiritual.

Project Title: "Most Potent Art" – A Novel
Faculty Investigator Name: Tom Cook
Faculty Investigator Department: Film Studies
Amount Awarded: $2,724.16

In late Fall of 2019 I attended a screening of Star Trek II: The Wrath of Khan. William Shatner (who portrays Captain James Kirk in the film and TV series) was present and shared stories – one of which was that he had done an eight-day cross-country motorcycle ride for charity and had perhaps a hundred hours of footage documenting it – but he had been unable to find any editor to attempt to tackle the project. On a lark, I wrote Mr. Shatner and volunteered as part of my own Professional Enhancement to edit the footage for him. Not expecting any real reply – to my astonishment he called me and accepted! I have these past years been working with him and we have completed a nearly eight-hour documentary which he is presently trying to solicit for distribution. My next responsibility is to do what is professionally called "finishing" – making sure all edits are tight, colors and exposures are proper and uniform, adding any necessary effects, titles, and credits. Unfortunately my personal editing system (which was up to the initial editing task) is insufficient to complete this expansive and exhaustive project. I recent purchased a very high-end computer to perform this "finishing" but inasmuch as my

previous system used HD televisions as monitors, these do not have the resolution to provide an adequate image. As such, I need to purchase two highly-improved monitors. Once completed, we anticipate a world premiere screening locally to highlight Keene State's participation in the project.

Project Title: Scholarship in Sound & Image Workshop on Video-graphic Criticism
Faculty Investigator Name: Lisa DiGiovanni
Faculty Investigator Department: Holocaust and Genocide Studies/Spanish
Amount Awarded: $3,000

My interdisciplinary research centers on literary and cinematic representations of war, dictatorial violence, and genocide in 20th - 21st century Spain and Chile. I deal with narratives and films that render visible the multiple traumas related to state repression and militaristic culture. Currently, I am working on my second monograph, Militarized Masculinity in Spain and Chile: Memories of Torture through Film and Narrative. To convey the main ideas of the book, I am producing a video-essay using Adobe Premiere Pro. Audio-visual digital scholarship figures prominently in my plans as it offers exciting new avenues for scholarly discourse and an engaging pedagogical tool. If granted this Faculty Development Grant, I will participate in the Scholarship in Sound & Image Workshop on Video-graphic Criticism, planned for 2022. It is a two-week workshop at Middlebury College in Vermont where experts in the field will teach participants about the conception and production of film & media criticism via digital sound and moving images. My goals for the workshop are twofold: to improve my own video-graphic scholarship and to create a cohesive methodology to teach scholarship in sound and image at KSC in my two departments, which include Modern Languages and Cultures and Holocaust and Genocide Studies.

Project Title: Spring Composition Endeavors: Performance and Website Development
Faculty Investigator Name: Heather Gilligan
Faculty Investigator Department: Music
Amount Awarded: $3,000

This proposal encompasses two projects that will serve to support and advance my scholarship as a composer. The first, performance and recording of Mourning Dew, will serve as an example of successful harp writing for our composition students and will provide an opportunity for me to receive an on-
campus performance and quality recording of my composition for violin, flute, and piano. The second, that of website development, will enable me to better market and promote myself as a composer. The development of a new website, with greater functionality and a more professional appearance, will help me to secure future commissions with professional musicians across the nation and globe. The website will contain a searchable catalog of my compositions, an online store for purchase of my music, printable bios for concert programs, and a writeable form for musicians to report performances of my music. As a professional

composer, it is imperative for my website to have the capacity to shape my public and professional identity. With the establishment of a more comprehensive website, I will have more tools at my disposal as I continue to develop and promote my compositional career. Once the website is established, I will be able to post the new audio file for Mourning Dew and other works that are previously recorded and deserving of such a platform.

Project Title: Sonic Blanket
Faculty Investigator Name: Jonathan Gitelson
Faculty Investigator Department: Art and Design
Amount Awarded: $3,000

"Sonic Blanket" is a multimedia artwork addressing the themes of isolation, community, history, and place. The key collaborators on the project are myself, Brattleboro poet Diana Whitney, Brattleboro musician Weston Olencki, and Pennacook-Abenaki tribal leaders and educators Paul and Denise Pouliot. The five of us have been working collaboratively for the past year to create a sound art piece interweaving original poetry, music, and field recordings. The finished composition will be broadcast nightly for one year on WVEW 107.7fm (Brattleboro Community Radio).The radio piece will be paired with a series of visual artworks that I am creating based on the specific region that will be able to hear this sound art piece as it is broadcast over the radio. One element will be a hand-drawn map of the precise area within the outer limits of the broadcast signal, another will be a series of ten photographs of the night sky taken within these boundaries during the times the sound piece is being broadcast. Funding from a Keene State Faculty Development Grant will be used to purchase full page newspaper ads in the Brattleboro Reformer and the Commons (Brattleboro based non-profit newspaper). These ads will feature new artworks from the project that I am custom creating specifically for these publications as a way of alerting the local community to the project, while at the same time providing a printed work of art for the price of a newspaper (or in the case of the Commons, for free).

Project Title: Transformative Digital Mentorships with Emergent Bilingual Readers and Writers
Faculty Investigator Name: Erica Holyoke
Faculty Investigator Department: Education
Amount Awarded: $2,903.94

This project focuses on the transformative nature of digital mentoring between preservice teachers and kindergarten authors. Due to the continued impact of Covid for early field experiences in teacher preparation, this research provides an important innovation to enhance future teachers' learning about responsive teaching and meeting the diverse needs of young learners. The preservice teachers will apply their course-learning through eight-weeks of digital literacy mentoring with storytelling and story acting working with kindergarteners in Austin, Texas. I will examine the impacts of the mentoring on teachers' development and comfortability with inclusive and responsive literacy instruction, and the impact of the

mentoring for young writers. As part of a larger study with ten universities exploring the transformative impact of mentoring experiences, my study adds to the field by examining the critical impact of mentoring in a digital literacy format. The preservice teachers will engage with child-driven learning, and amplify the strengths of writers across organization, phonics, engagement and joy in literacy, and comprehension. From this research, I intend to submit, present, and publish two papers at national conferences with findings both from the impacts for preservice teachers and my instructional decisions as a teacher educator, as well as highlighting instructional moves for digital literacy instruction. As part of the larger study across six states, this research will also support in amplifying the work that Keene State College does to prepare teachers in a collaborative book project about the varying transformative mentoring experiences in ten different settings and teacher preparation programs.

Project Title: The Standard Alphabet: The origin of the U.S. Highway System Typeface
Faculty Investigator Name: Randall Hoyt
Faculty Investigator Department: Art and Design
Amount Awarded: $3,000

This documentary tells the story of the Federal Highway Administration (FHWA) Standard Alphabet used on the green highway signs has been the official typeface of the United States Highway System for over 60 years. This ubiquitous, quirky, and at times maligned typeface met the need for road signage that quickly and effectively provided critical information to drivers traveling at high speeds. The Standard “Alphabets” — the FHWA does not use the words font or typeface — were the product of rigorous testing and development to make the first standardized signage system for US roadways beginning in the mid 1930s. Since that time, it has been adopted by many other countries including Canada, much of Central and South America, Thailand, and New Zealand. As the largest, (and most under-appreciated) visual identity system in the world its origins are not clear. The typeface has peculiar design features that are significant in the context of historical developments in typography. The design of this typeface is attributed to transportation psychologist Theodore Watson Forbes in the 1940’s, but this assertion has not been adequately established. It is the goal of this project to tell the story of this humble and serviceable typeface.

Project Title: Boston Dance Theater Creative Residency 2022
Faculty Investigator Name: Cynthia McLaughlin
Faculty Investigator Department: Theater and Dance
Amount Awarded: $1,951

I have been selected to conduct a creative residency with Boston Dance Theater in September 12-16 2022. While in residence, I will fully choreograph and rehearse an original work. I will research, through both embodied and traditional research methods, the ways in which images of women as maiden or crone affect a culture’s relationship to the natural environment. By researching depictions of Baba Yaga in different traditions (specifically Italian folkloric) and

probing images and story for connections to one's own lived experience, I will work in collaboration with the dancers to generate rules of engagement for a specifically devised world. Within this practice, the participants will establish norms and language for movement exploration. As they delve into images, language, gesture and resonance around the ideas of maiden and crone, they will look for connections to the socio/political issues connected and responding to climate. Where are the intersections? How might one's understanding and misunderstanding of a woman's relationship to aging relate to the ways one relates to the greater natural environment? The Keene State Faculty Development Grant will support my residency by funding travel expenses over the course of the week long residency.

Project Title: Print Exhibition at Galleri Se Konst, Falun, Sweden 2022
Faculty Investigator Name: Paul McMullen
Faculty Investigator Department: Art and Design
Amount Awarded: $3,000

Over the past ten years I have been interested in the use of simple production software and machines to be used in the art making process. I have been working with 3-D printers and laser engravers in my ceramic studio. Currently, because of staffing issues I have been teaching Printmaking for the Art & Design Department at KSC. This has created an interest in CNC (Computer Numerical Control) machines and how they could be used in the printmaking process as well as the ceramic process. While on sabbatical I will explore the possibilities with a CNC machine by cutting and engraving large scale prints alongside large-scale ceramic tiles. I will create a new series of prints and tiles to be exhibited at "The Gathering" in Falun, Sweden where I have been invited to be an Artist in Residence at the Best Friends Showroom studios hosted by Galleri Se Konst in the spring of 2022.

Project Title: *Chaucer and Becket's Saracen Mother: The Man of Law's Tale and Race in the Middle Ages*
Faculty Investigator Name: Meriem Pages
Faculty Investigator Department: English
Amount Awarded: $3,000

Chaucer and Becket's Saracen Mother: The Man of Law's Tale and Race in the Middle Ages focuses primarily on two texts, the late medieval English legend about Saint Thomas Becket's non-Christian mother and Geoffrey Chaucer's The Man of Law's Tale from his masterpiece The Canterbury Tales, to discuss the larger issue of late medieval anxiety about the conversion of the Other to Christianity. These works are written at a time when the Other, particularly the Saracen Other, is both valued and seen with great suspicion. As a result, these two texts—as well as other late medieval narratives—increasingly question the mechanics of conversion, presenting conversion not just as an event, the climactic event of baptism, but as a process

during which new converts must acquire the language, dress, and customs of their adoptive community.

School of Sciences, Sustainability, and Health

Project Title: Development of an Inclusive Physical Activity Camp for Trans and Non-binary Youth
Faculty Investigator Name: Mel Adams
Faculty Investigator Department: Human Performance and Movement Science
Amount Awarded: $2,478

The purpose of the proposed project is to develop an evidence-based physical activity intervention for transgender and non-binary youth (10-13 yrs) that supports physical and emotional wellbeing. Much research has shown that gender diverse youth are at higher risk for depression, anxiety, substance abuse, and suicide. Regular physical activity is known to reduce feelings of anxiety and depression, though it has not been specifically tested in trans and non-binary people. A gender inclusive physical activity day camp will be developed to promote physical activity as a self-care practice. The aim of this program is to expose gender diverse youth to forms of movement that are not gendered and create a supportive environment for their gender expression. This research study will assess the effect of a one-week physical activity program on gender dysphoria and anxiety immediately after and at 3 and 6 months post intervention.

Project Title: Procurement of Electromyography Equipment for Instruction and Research
Faculty Investigator Name: Lito Amit
Faculty Investigator Department: Safety and Occupational Health Allied Sciences
Amount Awarded: $2,280

Muscular fatigue is one of the common occupational conditions experienced by workers involved in manual material handling. Among the risk factors are repetitive motion, force, extremely cold temperatures, and vibration. Construction, for example, is an industry that has excessive physical demands and exposure to vibration from equipment use. Within the realm of occupational health and safety, muscular fatigue in relation to these physical risk factors is not yet fully understood. The goal of this proposal is to procure portable electromyography (EMG) equipment that will be used to enhance instruction in an ergonomic course and provoke research interests among safety students.

Project Title: Religion in Modern German Nationalism
Faculty Investigator Name: Philip Barker
Faculty Investigator Department: Politics and Legal Studies
Amount Awarded: $3,000

Funding from this grant will support travel and study in an immersive German language course through the Goethe-Institut in Germany. I am beginning a new book project that looks at religious nationalism in a variety of contexts around the world. One part of the project examines the evolution of German and Austrian nationalism in response to the refugee crisis of the last six years by analyzing speeches and public statements of various German leaders in the original German. This project is dependent on a stronger understanding of the German language, and this immersive course will provide the first step in that process. The ultimate results of the research project will be presented at conferences and will likely be included in the new book.

Project Title: Assessment of different buildings configurations to increase natural ventilation rate through Double Skin Facade
Faculty Investigator Name: Mohammadmehdi Danesh
Faculty Investigator Department: Architecture
Amount Awarded: $3,000

Using glass facades has always been the focus of attention due to the transparency and visual contact with the outside. Transparency is usually the main reason for using the glass facades that allows residents to have a close relationship with the outside of the building. In addition to transparency, visual appeal, natural light, and the building's integrated appearance are other features of this type of façade. Unfortunately, conventional glazing façades can cause poor natural ventilation, thermal discomfort, and increasing energy consumption.
To improve the facade's transparency as an aesthetic feature and enhance thermal comfort and natural ventilation inside buildings, designers have expressed a great tendency toward using passive glazing technology in buildings. More importantly, due to the COVID 19 pandemic, natural ventilation plays a more important role in buildings than before. One of these passive glazing technologies is Double Skin Façade (DSF). As a basic definition, DSF is a particular type of envelope, where a second "skin," usually transparent glazing, is placed in front of a regular building façade. The building should be very well adapted for cross-natural ventilation to create it through the DSF in the user spaces. This proposal aims to study different configurations of buildings to enhance natural ventilation in user spaces through Double Skin Façade technology. DesignBuilder software will be used to analyze the natural ventilation and thermal behavior with different configurations.

Project Title: Protecting which nation? Different regimes of sovereignty and sacrifice in the COVID-19 pandemic.
Faculty Investigator Name: Sasha Davis
Faculty Investigator Department: Environmental Studies and Sustainability
Amount Awarded: $2,938

This research project will examine how different forms of governance have affected different U.S.-affiliated islands' ability to manage their response to the COVID-19 pandemic. I plan to visit three jurisdictions this summer for more in-depth study: O'ahu, Majuro Atoll, and Guam. These island groups share the common history of once being colonized 'territories' of the U.S., but today they are categorized (respectively) as a state, an independent country (in 'Free Association' with the U.S.), and an unincorporated colony. By examining these case studies, I hypothesize that different contemporary forms of governance expose people to very different COVID-19 health risks while also fundamentally affecting local residents' agency to address them. I am applying for a Faculty Development Grant in order to conduct a two-week field research component of this project. During the field research I will conduct interviews with public health experts, government officials, military personnel, and sovereignty advocates to examine the different ways that residents in these three contexts have had the agency to conduct anti-COVID public health programs – and to study the ways that political relationships with the U.S. have enabled or hindered them. This project links together and extends three strands of research that I have been undertaking over my career: explorations of sovereignty, community health/biopolitics and Asia-Pacific Studies. I will use this research to complete an academic article and I also plan to use this two-week research stint as a preliminary project that can increase my chances of obtaining a larger external grant for continued research.

Project Title: Designing a Sensor Network to Assess the Influence of Mean Radiant Temperature on the Comfort of Building's Occupants
Faculty Investigator Name: Fernando del Amo Gonzalo
Faculty Investigator Department: Sustainable Product Design and Architecture
Amount Awarded: $2,408

Numerous parameters affect comfort and indoor air quality in buildings. Fanger's Predicted Mean Vote (PMV) method stated all the variables that affect comfort indoors, depending on clothing insulation, radiant temperature, air temperature, airspeed, metabolic rate, and humidity. Mean Radiant Temperature is the uniform temperature that considers interior surfaces and the position of occupants. However, measuring the Mean Radiant Temperature is a complicated process with the current technology and requires expensive equipment. A multidisciplinary team of researchers has developed a prototype of disruptive devices that can house several sensors. The proposed device can be used individually as part of a network of sensors located in various building parts. The first objective of this research is to test the proposed devices in different buildings to analyze the effect of Mean Radiant Temperature on human comfort, especially in office buildings exposed to solar radiation. The second objective is

to assess the indoor air quality of different facilities and their relationship with energy efficiency. By deploying the proposed sensors, indoor temperature, relative humidity, CO2 concentration, toxic chemicals, and other harmful particles will be measured. Finally, this project aims to measure and store data of various parameters related to safety and comfort within buildings.

Project Title: Wigwam Made with Modern Materials
Faculty Investigator Name: Paul Fowler
Faculty Investigator Department: Sustainable Product Design and Architecture
Amount Awarded: $1,427

Wigwams are the traditional homes of native people of the New England region, typically made with saplings covered by birch bark. This project will create a new prototype of this traditional home made with modern materials. The prototype will be a laboratory used to determine how sustainable this building type is and if modern materials can perform as well or better than traditional ones. Much building science research goes into the energy that can be saved by creating a well-insulated building envelop. While this is an important part of what makes a sustainable building, finding more energy efficient ways to make shelter is an important part of the complete picture of sustainable building practices. There is a wealth of R&D that has been done over millennium by native people that the current building industry does not take advantage of. A wigwam is a much more energy and material efficient way to provide shelter. By learning directly how to build this type of shelter with modern materials we can learn and share this knowledge with the building profession.

Project Title: Simultaneous Fabrication of Natural and Synthetic Polymer Using 3D Printing Process.
Faculty Investigator Name: MD Ahasan Habib
Faculty Investigator Department: Sustainable Product Design and Architecture
Amount Awarded: $3,000

Three-dimensional bioprinting is a rapidly growing field attempting to recreate functional tissues for medical and pharmaceutical purposes. Development of functional tissue requires deposition of multiple biomaterials encapsulating multiple cell types i.e. bio-ink necessitating switching ability between bio-inks. Existing systems use more than one print head to achieve this complex interchangeable deposition, which decreases efficiency, structural integrity, and accuracy. In this research, we developed a nozzle system capable of switching between multiple bio-inks with continuous deposition ensuring the minimum transition distance so that precise deposition transitioning can be achieved. Finally, the effect of rheological properties of different bio-material compositions on the transition distance is investigated
by fabricating the sample scaffolds.

Project Title: Investigating the effects of chemical environment on chemical bond making and breaking
Faculty Investigator Name: Jesse Marcum
Faculty Investigator Department: Chemistry
Amount Awarded: $2,644

At the most basic level, every chemical reaction involves the making and/or breaking of chemical bonds. While a great deal is known about chemical bonding, most of our understanding pertains to the intrinsic nature of bonds, or in other words, how bonds behave when the compound that they are a part of is completely isolated. Since the vast majority of chemistry does not involve such isolated species, it is of great importance to learn more about how bonds are influenced by their surroundings. In this project, we will perform a series of experiments to determine how the chemistry of gold chloride is affected by the presence of different organic solvents. By building a better understanding of both how and why these solvents impact the chemistry of gold chloride, it will be possible to achieve better reaction control when performing, for example, the synthesis of gold nanoparticles, which can be used for a wide range of applications such as light harvesting for energy applications, in vivo imaging of animal tissue, and catalysis. Results from this project will be disseminated at professional conferences, with the eventual goal of preparing a manuscript for publication in a peer-reviewed scientific journal.

Project Title: Publication Costs for Open Access Optics Education work
Faculty Investigator Name: Sarah McGregor
Faculty Investigator Department: Physics
Amount Awarded: $2,930

All too often when physics and optics are taught it is boiled down to an equation, with educators teaching the mathematics instead of the concepts lying behind the math. This methodology tends to exacerbate preconceived ideas of science and mathematical failings in students, making science, and especially physics sometimes feel unattainable. Our goal with this research and submitted paper is to begin the conversation in the optics community of putting the learner's perspective in the forefront. The journal article submitted for publication is on a new approach to education in optics with the intent of breaking through science and mathematics denial in students by building conceptual understanding through guided inquiry and exploratory learning, building students confidence towards their own science ability and mathematical knowhow. This grant proposal seeks funding to help pay for publication costs associated with open source publishing of this research.

Project Title: Last Punta* at San Pedro: Analysis of the Chipped Stone Tools from the Final Season (2022) of Excavations at San Pedro, Ambergris Caye, Belize
Faculty Investigator Name: James Stemp
Faculty Investigator Department: Sociology, Anthropology, and Criminology
Amount Awarded: $2,907

Archaeologists working in Belize continue to reconstruct the impact of the Spanish arrival on indigenous Maya communities in the 15th-17th centuries A.D. Available evidence suggests not all Maya communities were affected in the same way. Some fell under the direct control of the Spaniards; however, others p. 9managed to maintain various degrees of autonomy. One way to observe the effects of the Spanish presence is to examine the Late Postclassic and Early Colonial period (ca. A.D. 1450-1700) material culture at Maya sites. One of the few known Late Postclassic/Early Colonial offshore Maya occupations is the site of San Pedro on Ambergris Caye. At this site, chert and obsidian stone tools are being used to document patterns of raw material acquisition, technological production, stone tool repair and recycling, stone tool use, and trade and exchange relationships. Based on the results of stone tool analysis in the 1990s and 2017, Maya lifeways were minimally disrupted on Ambergris Caye. The final season of excavations at San Pedro in the summer of 2022 will provide one last opportunity to examine more stone tools to see if this pattern of minimal disruption continues to hold true. The lack of any major upheaval on the caye, based on archaeological evidence, serves as a valuable contrast to the significant cultural changes noted at many mainland Maya sites after the Spaniards arrived.

Project Title: Software Support for an Autism Language Application
Faculty Investigator Name: Lawrence Welkowitz
Faculty Investigator Department: Psychology
Amount Awarded: $2,000

A research-based speech application called Speechmatch provides subjects with Autism immediate feedback on matching critical elements of conversational speech. Subjects hear phrases with various emotional content (happy, sad, pleasant surprise, unpleasant surprise, neutral) and see the soundwave they generate. They then repeat the phrase and receive immediate feedback about their percentage match of critical elements of speech, including rhythm, pitch and volume. The goal of the program is to teach the subject how to process and produce appropriate emotion in conversation speech. This application has been utilized in Autism studies at Keene State College for a number of years resulting in numerous papers and publications with students and faculty. Over the years the application has “degraded” in that it is no longer fully compatible with newer devices and must be upgraded in order for studies to continue. This grant will support a much needed upgrade to the software.