



College of Liberal Arts and Sciences
Frostburg State University
Frostburg, Maryland 21532



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College of Liberal Arts and Sciences

Annual Dean's Student Colloquium

April 26, 2022

**Samina Clark and Michael Lynch (Visual Arts)
Brochure Design for the Smithsonian Hirschhorn Museum and
Sculpture Garden**

The project was highlighting the work of Abigail DeVille and her upcoming exhibition, plus the work of Mark Bradford, also currently exhibiting at the Smithsonian. This gatefold brochure incorporates a complex direct mail folding design with contemporary content: promoting two American artists who have simultaneous, politically and socially relevant work currently being exhibited at the Hirshhorn Sculpture Museum, Washington DC.

Both Michael Lynch and Samina Clark took the opportunity to bring this project into a higher, more socially relevant context by emphasizing the work of Abigail DeVille that responds to the Black Lives Matter movement and her “Light of Freedom” mixed media installation currently on view at the Smithsonian.

Both students are currently working with the Creative Services Department at FSU, gaining hands-on experience preparing client and target-audience oriented, deadline-specific, professional graphic design work.

**Brian Records (Theatre and Dance)
Service Through the Theatre Arts**

Theatre major Brian Records has been sharing his love of theatre with local kids through Service in the Arts. An alum of Braddock Middle School's Braddock on Broadway, Brian has been serving as their Technical Director for four years, most recently during a January production of Guys and Dolls, JR, for which he also assumed the leadership role, co-director. The process, which began last fall, involved over twenty-five energetic middle school children and culminated in two weekends of excellently attended performances. Of the experience, Records noted, "I fell in love with theatre in middle school, so being able to give back to the program that started my love for the art, and help to teach kids about theatre, has been nothing short of incredible."

As President of the Savage Mountain Stage Combat Club through the Department of Theatre and Dance, Brian also traveled to Southern Middle School in Garrett County, MD and co-taught basic stage fighting skills in unarmed combat with faculty member Darrell Rushton. In his capacity with the SMSCC, he helped increase participation numbers in the group, extending club membership outside of the department to include five non-majors. As part of annual testing through the Society of American Fight Directors, Brian received recommended passes in several weapons proficiencies, the highest achievement attainable through these tests.

In addition to Braddock on Broadway and Stage Combat, Brian worked with Mountain City Center for the Arts on their JumpStart Theatre program, a select program that focuses on creating "sustainable theatre arts programs in underserved middle schools." JumpStart Theatre is a national program in collaboration with iTheatrics and Music Theatre International (MTI). During this program, he traveled to Northern Garrett Middle School, also in Garrett County, to help on their spring theatre production.

Of his service to the field, Brian said, "During my time at Frostburg, I have been blessed with incredible opportunities to give back to the community that has given so much to me: the theatre community."

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Joshua Clem (Chemistry)
Triticain- α : An Enzymatic Approach to Managing Celiac Disease

Celiac Disease (CD) is an autoimmune disorder characterized by the inability to digest gluten proteins in genetically susceptible individuals, resulting in chronic inflammation of the small intestine and mucosal damage. Genetic determinants of the condition are the presence of human leukocyte antigen (HLA) DQ2 and HLA-DQ8 encoding genes. The global prevalence of CD is around 1%. Currently, the only known treatment for CD is a gluten-free diet. Triticain- α is a wheat cysteine protease demonstrated in prior research to elicit glutenase activities in the immunodominant 33-mer α -gliadin-derived peptide in conditions simulating the gastric environment of the stomach. RNA was isolated from germinating *Triticum aestivum*, cDNA was polymerized, and the Triticain- α coding sequence was amplified with polymerase chain reaction (PCR). The obtained coding sequence was inserted into the expression plasmid aLICator Ligation Independent Cloning and Expression System. Triticain- α was expressed by isopropyl β -d-1-thiogalactopyranoside (IPTG) induction of the lac operon promoter in *E. coli* (BL2-DE3). Further analysis of enzymatic potentiality of Triticain- α will include immobilized metal affinity chromatography protein purification and incubation of the protein with gluten in gastric conditions. Gluten hydrolysis products will be identified to confirm glutenase activities of Triticain- α .

Christopher Blackwell (Theatre and Dance)
"The Adventurers"

Theatre major Christopher Blackwell has been choreographing dances in his head for years. When the songs of EDM and genres from renaissance faires and folk music entered the sound waves, he imagined adventures to distant lands, and found that dance could take him there.

As a Dance minor focused in Acting, imagination has been his catalyst for storytelling in dance and theatre. In November, he auditioned for the Spring Dance Concert and got accepted as a Dance Company member, an FSU tradition for over forty-two years. When the time came to submit proposals for choreography, he returned to his folk roots and proposed "The Adventurers."

Performed during the Spring Dance Concert: Ricochet on April 7, 8, and 9, "The Adventurers" shaped the energy of three dancers into an upbeat story about the joy and happiness of wandering, adventuring, and connecting to the world through movement and nature. For the piece, Blackwell says that he took everything he knew, everything he was taught about Theatre and Dance, and put it into the piece. Set to the Celtic sounds of "Spirit of Freedom" by Peter Crowley, Blackwell said, "I wanted to do something that was straight to the point and made people smile and think I did that."

**Sydney Crawford, Cody Yacenech, and Destiny Warnick (Social Work)
Addressing Homelessness in Cumberland, MD Through Modular
Housing**

Over the course of the semester, students in SOWK 471: Generalist Practice with Communities and Organizations, work in small groups of three to four students on a group project designed to bring about social change to a community. This project is divided into two parts. In Part I: Community Assessment, the three students in this group immersed themselves in learning, in-depth about Cumberland, MD through independent research. The students used this information to compile a community profile, detailing Cumberland's demographics, economic base, form of government, key social institutions, chief business, recreational, and residential areas, community resources, and past and current concerns. Based on interviews conducted with community stakeholders, the students developed a social profile of Cumberland, highlighting the community's prevalent values and thoughts regarding inclusion, exclusion, and providing informal and formal supports to vulnerable, at-risk, and underserved populations and consumers of human/social services. In taking all of the preceding into consideration, the students identified and assessed Cumberland's strengths and deficiencies, leading to a statement of the problem in which one need was chosen to focus on with respect to exploring how best to address it in Part II: Macro-Level Intervention. The students chose to focus on the lack of affordable, updated housing in Cumberland, in particular among individuals experiencing chronic homelessness as well those unable to find stable housing. While an exact number of people in Cumberland who experience this need is currently unknown, it is a relevant issue that community members repeatedly discussed in the interviews. Upon review of several different housing program options, the group considered that the use of modular, temporary housing was the most appropriate choice in consideration of cost, functionality, and ability to foster a sense of community (e.g., units within the modular community would be designated for shared living space such as a dining area, recreational area, laundromat, dog park, etc.). In addition, on-site services, including case management, health care, counseling, and educational/vocational training, would be made available to residents, thus easing their ability to access said services. To facilitate the implementation of this program, the students developed a logic model depicting the requisite resources needed to carry out the program's activities leading to measurable outputs and immediate, intermediate, and long-term outcomes.

**Colin Eason (Earth Science)
Using the Past to Guide the Future: Reconstructing the Environmental
History of Finzel Swamp from Multi-Proxy Data for Future
Management**

Finzel Swamp located in Western Maryland is situated within a frost pocket and is described as a remnant boreal fen from the Pleistocene Epoch. The lower temperatures create a cold climate refugia resulting in distinct biodiversity, which is being actively managed by the Nature Conservancy. Vegetation reconstructions via palynology have been undertaken in the Appalachians but have not been applied to Finzel Swamp. A multi-proxy approach was employed to reconstruct vegetation histories and develop a chronology to examine changes through time. Five 1 m sediment cores were extracted, and plant macro fossils were used for radiocarbon dating, resulting in a basal date of 10,910 BP. Pollen samples were taken at 5mm intervals from targeted areas of the cores. The vegetation history suggests early dominance by pine and sedges with establishment of a more extensive range of mixed deciduous woodland, including oak, beech, and sweet chestnut from circa 7100 BP, before returning to pine dominance. The vegetation succession of Finzel Swamp has evolved under different climatic conditions, yet the cold air drainage has been tentatively interpreted as a dominant factor for vegetation type, although the role of fen hydrology cannot be diminished and requires further investigation. Yet Finzel swamp serves as a unique lens into the past vegetation history of the central Appalachians, which is critical to understand to allow for sensible planning of landscape resource management in the future.

Matthew Ward (Health Science)
Molecular Characterization of Mycorrhizae Fungi to Develop Organic Fertilizer with Nitrogen-Fixing Bacteria

The microorganisms within the soil hold an important role in the global cycling of elements and the nutrient content that is available to support the ecosystems. Biological fertility of soil is a highly complex and dynamic component of soil fertility and is least well-understood component of soil fertility, as well. To improve the crop production, mainly nitrogen containing chemical fertilizers have been used to increase the yield. The problem with using these chemical fertilizers is that they contaminate the groundwater, and most dangerously they are related to health issues we have. The research question is what combination of mycorrhizae fungi, which can increase the plant absorption of elements from the soil, and bacteria *Cyanobacteria*, *Azospirillum*, and *Rhizobium* in a biofertilizer is more effective in terms of the quality and quantity of the crop yields. Mycorrhizae fungi was extracted and identified from three different mycorrhizae products that were used to grow three replicates with over 50 corn seeds per pot for 28 days and 3 months in the green house at Frostburg State University, Maryland. Then, the fungal DNA was extracted and analyzed in the microbiology lab. Once the time was reached, soil and the roots of the plants were used to extract mycorrhizae fungi. The extraction of DNA of the fungi was performed using earth microbiome ITS Illumina sequencing protocol. Fungal DNA was extracted using the Qiagen soil extraction kit with a 15,000g centrifuge at 4°C. Amplification of the DNA was performed using PCR with the nucleotide oligoes such as ITS1-F forward primer and kabir ITS2rcbc barcode primers for the fungi. The extracted DNA samples from the fungi will be sent to Genewiz next generation gene sequencing lab to identify fungi with the performance of DNA purification, analyzing results of the Nanodrop, and Gel Electrophoresis. In addition, the spore count will also be collected for each product to find how much mycorrhizae that was cultured in the soil could inoculate plant roots. After the molecular characterization of the fungi, they will be incorporated into cultured and freeze-dried *Cyanobacteria*, *Azospirillum*, and *Rhizobium* in the lab in different quantities and use these mixtures to grow corn seeds to determine which combination of the newly made biofertilizer will give the highest yield of corn. In addition, nitrogen content of the product will be measured using a nitrate electrode for further studies to increase the nitrogen fixation levels by changing the compositions of the bacteria and fungi of the soil.

Sarah Loveless (Psychology)
Diversity and Complexity of BDSM/Kink Desire, Behavior, and Identity

BDSM involves the erotic manipulation of power and/or pain sensations. For some, these experiences are a focal point of their sexuality such that BDSM has been conceptualized as a sexual orientation toward power dynamics in an erotic context. Sexual Configurations Theory (van Anders, 2015) offers more precision, suggesting that BDSM may function as one of several parameters of one's sexuality that includes identity (e.g. kinky), attraction (e.g. to power/pain play), and behavior (e.g. bondage). According to this theory, BDSM sexuality would exist simultaneously, and independently, alongside other parameters of sexuality such as orientation to gender. It is unclear from current research if this conceptualization matches the lived experience of individuals who engage in BDSM behavior. The purpose of the present study is to explore the experiences of identity, desire, and behavior among individuals who incorporate BDSM/kink behaviors into their sexual encounters.