Second Annual
UNDERGRADUATE Scholars Conference

Friday, December 15, 2017
2-5pm

BERKSHIRE COMMUNITY COLLEGE
Welcome

This year Berkshire Community College (BCC) will host its Second Annual Undergraduate Scholars Conference. This conference is a celebration of exceptional student work at the undergraduate level. BCC students from across the curriculum will present their outstanding work in either a twenty minute presentation or in an open poster session.

We would like to thank you for joining with our academic community to share in this celebration of fine academic work.

Keynote Speaker

KARI DALY is a native of Pittsfield and a second-year Ph.D. student and First-Year Writing Instructor at the University of Connecticut. She holds a trifecta of Massachusetts state college degrees: an associate's degree in Fine Arts/Theatre from Berkshire Community College (2000), a bachelor's degree in Fine Arts from Massachusetts College of Liberal Arts (2004), and a master's degree in English from Westfield State University (2014). In addition to her studies, Kari is currently working as a box office supervisor at MASS MoCA, where she has been employed since 2012, and is active in Mill City Productions, a North Adams-based community theatre group.
Schedule

Plenary Session in The Connector

2:00 pm  Welcome — Chris Laney, Interim Dean of Humanities
          Introduction — Jeremy LaCrosse
          Keynote — Kari Daly

Student Presentations in Hawthorne Hall

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<td>No 'Werk' Without Pay: How Reality TV Stars Are Pillaging House/</td>
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Poster Session & Reception in The Connector

4:00 pm  Culinary Presentation
          Emma Barille, Matilda Brule
          Determining the Origins of Commercial Seafoods Using DNA Barcoding
          Sarah Cicchetti
          Hardi Kiwi
          S DeMing, K Lauzon, C McMahon, A Mulligan, L Nuñez, H Quenneville
          Biotech on a Budget
          Darwin Macdonald
          The Effects of “Ultra-Filtration” on Protein Levels in Milk
          Emily Moutz
          Service-Learning at Monument Valley Regional Middle School
          Sophie Shrum
          Enhancing the Future of American Youth Through SEL Education
          Soncere Williams
Presentations

JAHaira Camer

No ‘Werk’ Without Pay: How Reality TV Stars Are Pillaging House/Ballroom Culture
Faculty Sponsor: Colin Adams

Tamar Braxton, Kenya Moore, and Nene Leakes are three of TV’s most notorious reality stars. Their razor-sharp wit and trendsetting catchphrases (‘Shade’ ‘You tried it’ ‘Miss Thing’) have set social media ablaze and redefined the way that American society communicates with one another. But the birthplace of many of those catchphrases lies in House/Ballroom culture; the LGBT Black and Brown competition series and alternate familial structure that inspired Madonna’s hit song ‘Vogue.’

Ken Conlow Jr.

Black Waters of Doubt: Historical Events Transformed into a Graphic Novel of High Adventure
Faculty Sponsor: Matthew Müller

Black Waters of Doubt is a graphic novel developed from the tale of Theodore Roosevelt’s trip down the unexplored River of Doubt, located in Brazil, in the year 1914. Inspired by a segment of the Ken Burns documentary “The Roosevelts,” Black Waters is designed to be an entertaining and informative read for all ages. A variety of sources were consulted in the crafting of this narrative, including President Theodore Roosevelt’s own account of the journey, Through the Brazilian Wilderness, Ornithologist George K. Cherrie’s diaries, Candice Millard’s book The River of Doubt, along with countless photos from the expedition. The adaptation process included condensing time to improve pacing—emphasizing and enhancing moments of great drama and tension—along with combining minor participants into condensed characters, thereby avoiding long sections of exposition. By presenting a visual depiction of the events, along with a commentary not available in the primary sources, Black Waters of Doubt brings a new dimension to President Roosevelt’s harrowing undertaking. By using the sequential graphic art format to tell this story, even the most casual reader has an “easy in” to history, and the opportunity of enjoying a rollicking good adventure tale.
JACOB CUM
Charley’s Fund
Faculty Sponsor: L. Gordon Roberts

For my presentation, I am going to spread awareness and provide information regarding Charley’s Fund and the fight to end Duchenne’s Muscular Dystrophy (DMD). Charley Seckler is a 17-year-old boy suffering from DMD. We have been friends for 12 years and I have always been active in the fight against DMD. Through years of talk and discussion with Charley’s parents I have information and statistics that have been confirmed at the source. Back in 2004 Charley was diagnosed with the disease and the fight for the cure was started. Since then Charley’s Fund has raised over 40 million dollars and created 10 new treatments for the disease. This fund alone has developed the biggest following and has made more progress than any other thus far. With personal connections and a desire to cure this disease, my main goal for this conference will be to educate and spread awareness of DMD throughout the student body and faculty of BCC.

FANNY LISSETTE ARIZA CORREDOR
Gelatin-Based Hydrogels for Tissue Engineering
Faculty Sponsor: Gina Foley

This project proposes to synthesize and analyze two gelatin-based hydrogels. The first one will be cross-linked with methacrylamide and the second with chitosan. The use of mixtures of cells with polymers or other materials for the healing or replacement of biological structures in the body has been a rapidly developing scientific field. The study and development of these biomaterials belong to the area of tissue engineering. Gelatin is a mixture of proteins obtained by acid (type A) or alkaline (type B) through hydrolysis of collagen. It has excellent biocompatibility, biodegradability, and non-immunogenicity. Methacrylamide offers physicochemical tailorability to the material, while chitosan has wound healing and antimicrobial properties. The modification of the synthesis environment will produce different properties of the biomaterial produced, which will be analyzed, as will the biocompatibility property.

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The Code of Ethics
Faculty Sponsor: Reena Bucknell

I first became interested in the Police Code of Ethics through an assignment in my Police and Community class where we were to study the original Code and re-write it to fit better with modern police tactics and issues. The Code of Ethics is a very important part of the police community and is used as a set of moral and legal guidelines in how a department should run. When I first started to re-write my Ethics, I got stuck after the first sentence. However, after re-reading the original one over and over I started to understand it better. A lot of my inspiration for writing my own code of ethics came from my time spent in the US Army. We had something called the soldiers creed. This is basically a short version of moral ethics that every soldier should live by. Throughout my Police and Community class I have come to realize that a police department operates almost like the military does: both have their ethics, chain of command, laws to follow pertaining to their job and a sense of honor in what they do. I have found that many officers take pride in their work but remain humble when being thanked for something they did. Much like a soldier when being thanked for serving this country, we realize that it's a team effort, that working together with your fellow officers and having good communication with higher ranking officers can make all the difference in how a department operates.

Animal Sacrifice and How it Connects to the Santeria Religion
Faculty Sponsor: Aiden Clement & Colin Adams

Animal sacrifice is a religious practice that has existed for thousands of years. It has been used as a form of worship in various faiths around the globe, and is still utilized as a form of veneration and exchange in several religions today. This study will expand on the purpose of animal sacrifice, seeking to educate on the practice and differentiate it into two main types: sacrifice for receiving, and sacrifice for cleansing. To understand animal sacrifice's place in society today, this paper will also explore the Santeria faith, a religion which came into existence during the Slave Trade and grew in the Caribbean, later spreading into the United States. By examining past anthropological studies on various cultures and tribes, and conducting interviews with practitioners of Santeria, it can be understood that animal sacrifice serves as a means of achieving balance within a faith, with the sacrifice being received in exchange for a specific service, or simply as a gifting to the deities that the religion worships. The practice of animal sacrifice will vary depending on the religion and the ceremony in which the sacrifice is being used. While animal sacrifice is still practiced by many faiths today, it is often viewed as primitive and barbaric form of worship, and is generally seen with distaste by many in our society. In conclusion, by exploring different views of animal sacrifice, both ancient and modern, this practice can be better understood, and its purpose better defined.
DEGENERATIVE MYELOPATHY

On October 21st, 2017, I lost my German Shepherd to a disease that, unless a pet of yours is directly impacted, you probably have never heard of. It is called Degenerative Myelopathy, and it is considered “normal” for nearly 54% of German Shepherds to get this in their lifetime. Since I had been exposed to DM for about six months, I have read research conducted by The University of Missouri-Columbia College of Veterinary Medicine, The Orthopedic Foundation for Animals, and multiple other credible veterinary websites and articles. I also have a lot of background knowledge on the disease due to the conversations with my dog’s vet, Doctor Barbara Wohlfahrt. The purpose of my presentation was originally to inform a small audience about Degenerative Myelopathy, but now I would like to raise awareness of the disease. Not too many people know about it, and every dog lover should have the basic information. With research, I have found that any dog can have Degenerative Myelopathy and it is far more common than pet owners realize. The veterinary medical field does not know enough about it to stop it, so the least we could do as pet owners is bring awareness to it. With all the symptoms and complications, I have discovered that, while there is no cure, prevention, or treatment, we can make our dogs more comfortable as this terrible disease slowly takes our furry friends from us. With my presentation, I would like to allow my audience to find peace and help.
The kingdom fungi is a mysterious frontier of research waiting to be explored. The potential untapped applications that may exist in the vast world of this kingdom provide a valuable motive for better understanding the biological functions of these amazing life forms. As the fields of health care, biotechnology, and environmental science continue to search for natural innovations and solutions to modern problems, the compelling need to understand this valuable resource becomes apparent. In this pilot study, a bioluminescent variety of basidiomycete, panellus stipticus is cultivated in a laboratory with the goal of observing the process of mycelial growth, proliferation and maturation. Determining ideal growing conditions, preferred substrate, nutrient source and proper environment contributed to the successful life cycle of the panellus stipticus and were achieved resulting in brilliantly bioluminescent mycelium followed ultimately by fruiting bodies. Chemical process, biological function and evolutionary development of bioluminescence is discussed along with theoretical speculation for why a fungi might have this biologically rare and energetically expensive trait. This wondrous phenomenon occurs as a by-product of a complex luciferin based chemical reaction. One strong theory for bioluminescent fungi relates to the evolution of these species at a time when the atmosphere was drastically different from today. The chemical process of bioluminescence is an oxygen dependent reaction that may have developed as a way to use up excess oxygen, emitting light as a byproduct.
MARCO MORENO

An Exploration of the Links Between the Harlem Riot of 1935 and the Ferguson Riots of 2014

Faculty Sponsor: Charles Prescott

This presentation explores the unsettling similarities between the injustices that law enforcement has imposed on the black community in both Harlem and Ferguson, and how this injustice was ultimately the cause of historical and violent riots. The Harlem Riot of 1935 occurred at the tail end of an era that we now recognize as The Harlem Renaissance—a cultural, social, and artistic movement during what is considered a golden age for African American culture. The riot was Harlem’s first race riot, and it started because the black community in Harlem were convinced that law enforcement had murdered a young boy of African American and Latin descent. The riots that occurred in Ferguson, Missouri in 2014 also started due to the shooting of a young African American boy by a law enforcement officer. However, both riots occurred for reasons that go much deeper than just a singular event. The New York City mayor during the Harlem Riot issued a commission to investigate the causes of the riot, and the U.S. Department of Justice in 2014 launched an investigation into the events that surrounded the Ferguson riots. Using the information from these official report findings, as well as official news reports and scholarly articles, this presentation examines the similarities and differences in the riots that occurred in these two cities. Ultimately, the similarities between these two riots are stark, marking monumental moments in history when the black community stood up against discrimination from law enforcement.
Comparing the Old Schools of Epic Poetry
Faculty Sponsor: Nicole Mooney

Rap music and Greek epic poetry are distant cousins. Both of these genres of storytelling transcend time and connect people to the base of their cultures. But how do these two drastically different forms of poetry collide? Both bloomed from oral traditions of storytelling and eventually found permanence in writing. They also both have a complex structure. Epic poetry is written in dactylic hexameter, which is composed of feet and meter, whereas rap is built on bars with intricate rhyming patterns. On paper it is hard to hear the rhythm of dactylic hexameter because the complicated rhyme scheme was created in Ancient Greek. Thus it is difficult to translate, and no longer commonly read or recited in its traditional format. Rap’s intricate pattern, also known as flow, is hard to come across as new trends in the music industry, such as trap, take form. Thankfully, artists like Kendrick Lamar, Princess Nokia, and Chance the Rapper stay true to the roots of rap. In the 90s when some of the greatest rappers hit fame, such as Biggie Smalls, layers of vocabulary were necessary in order to push the boundaries of what it meant to be an MC. Rap and epic poetry rely on their audience. They pass down stories of commoners and praise heroes like Odysseus and Malcolm X. Like Homer and MF Doom have so greatly shown society, rap and epic poetry are art forms for the people, by the people.
EMMA BARILLE, MATILDA BRULE

**Culinary Presentation**  
Faculty Sponsor: Audrey Sussman

This presentation is an example of the range of techniques, ingredients and tools used in a restaurant or bakeshop, and demonstrates students' ability to produce professional quality baked goods.

SARAH CICCHETTI

**Determining the Origins of Commercial Seafoods Using DNA Barcoding**  
Faculty Sponsor: Gina Foley

Seafood mislabelling is all too common of a problem. Because of how easy it can be to make a mistake at any stage of production, such things as tilapia being misrepresented as white tuna or puffer fish being sold as headless monkfish have happened within the past decade. In one market study put on by two students in New York City, 23% of the samples collected were found to be mislabeled, and in several other studies between 2008 and 2011, anywhere between 10–50% of samples were found to have packaging that misrepresented the contents. However, there is a way to test to see if local fish has been mislabeled, and that is with a process called DNA barcoding. This is a process in which DNA from a specimen is extracted, purified, and sequenced in order to determine its species. More specifically, it is the mitochondrial cytochrome c oxidase subunit I, or COI gene that is amplified and sequenced. (Since mitochondrial DNA has more sequential differences between species than nuclear DNA, it makes for a better candidate for the barcoding process.) After the sequence, or ‘barcode’ is generated, it is compared against a database that contains known DNA barcodes that have been generated by other researchers. This procedure will be followed using seafood sold locally, in order to determine if misrepresenting the types of fish being sold is a problem experienced locally.

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Hardy Kiwi
Faculty Sponsor: Timothy Flanagan

The purpose of this project is to educate and promote awareness of the invasion of Hardy Kiwi (Actinidia arguta) in the Northeastern US. A prime example is found in Kennedy Park in Berkshire County. Our objectives are to identify options in managing and eradicating the plant. We gathered information through classroom discussions, individual online research, observational site visits, and publications as well as interviews with local advocacy groups. Some of these involved agencies included Massachusetts Audubon Society, Berkshire Environmental Action Team (BEAT), Lenox Conservation Commission, US Forest Service, and Berkshire Community College. Topics researched included the natural history of the Kiwi and how it originated, the importation, horticulture, cultivation, as well as the invasive traits. In the late 19th century the Kiwi was introduced from the Japanese culture and then grown commercially. The Hardy Kiwi was originally brought into Berkshire County for decorative and agriculture purposes. However, over the past forty years, hypotheses are all we have to explain why this once controlled fruit is now invasive in some specific areas. Current efforts to control and eradicate are presented. This plant, due to its destructive behavior among the native ecosystem in Berkshire County, has been considered invasive by environmental advocates, and despite efforts to convince the public, the Hardy Kiwi has not yet been officially included on the invasive species list yet.

Biotech on a Budget
Faculty Sponsor: Gina Foley

Affordable drug coverage is a problem most of America is familiar with. Insulin costs $275 for a 10 milliliter a bottle. The cheap alternatives to the EpiPen still cost $150 a shot. Lumizyme, a treatment for a rare genetic disorder called Pompe disease, can cost people upwards of $600,000 a year. Why? Each of these is a protein-based therapy, and these proteins can be produced easily with today's technology. This is a pilot study where I will attempt to extract, purify, and identify proteins using the technology at hand with a limited budget. Instead of a $3,000 refrigerated centrifuge, I'll be using one the school already possess, and will be transferring my samples to the freezer periodically. Instead of a $4,000 sonicator, I'll be using a French press coffee maker.
**EMILY MOUNTZ**

**The Effects of “Ultra-Filtration” on Protein Levels in Milk**

*Faculty Sponsor: Gina Foley*

Does Fairlife’s new “ultra-filtered” milk really contain 50% more protein than your average milk? Coca-Cola's maiden voyage into the dairy industry has brought a new product to the market: “Ultra-filtered” milk, and its claims of being the premium choice in the dairy aisle. 50% more protein, 50% less sugar, 30% more calcium, and it’s lactose free! When I saw this advertising I immediately thought, where does all that extra protein come from, and is it really that much more? If the dairy cows were producing it then all the milk companies would have similar protein content. Part of the answer is this new process of “ultra-filtration”, but the bigger question still remains, is there 50% more protein? To find out I will perform a Bradford’s assay to test for protein content. This test uses a spectrophotometer to measure the absorption change of the sample based on differing levels of a protein-dye complex. Should we all jump on board and start drinking designer milk, or is it just too good to be true?

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**SOPHIE SHRUM**

**Service-Learning at Monument Valley Regional Middle School**

*Faculty Sponsor: Kari Dupuis*

This semester I had the opportunity to participate in a Service Learning Project at Monument Valley Regional Middle School. A Service Learning Project is a small internship, consisting of fifteen hours, with the purpose of enhancing one’s educational experience through service to the general public. My Service Learning Project took place over five weeks from October to November 2017. During this time I shadowed the school adjustment counselor at Monument Valley, (Mr. Sacco), once a week for three-hour sessions, while he performed his usual daily tasks. My educational goals for this Service Learning Project were to observe and learn about the counseling process when working with children, to learn about restorative practice, and to observe and work with teaching teams that work with students. Over the course of this Service Learning Project I shadowed Mr. Sacco during individual meetings with students, meetings with parents, group meetings for organizing after-school programs, and disciplinary meeting for students who had broken the school rules. By participating in this Service Learning Project I was not only able to give back to my community, I was also able to gain valuable insight into what it means to be a middle school adjustment counselor. Before participating in this Service Learning Project, I had never thought that working in a middle school would be something I would want to do. However, after shadowing Mr. Sacco and experiencing the joy that this job can bring, I am now considering this job as a potential career in my future.

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SONCERE WILLIAMS

Enhancing the Future of American Youth Through SEL Education
Faculty Sponsor: Pamela Coley McCann

This project aims to address the benefits, limitations, and feasibility of an all-inclusive social and emotional skills curriculum across the k-12 public education setting. Social and emotional skills curriculum is often used in special education programs to address problematic behaviors in children. The lessons include teaching an array of skills that aim to instill emotional intelligence (EQ), which is the ability to recognize and manage our own emotions as well as the emotions of others. EQ is typically defined by our ability to be emotionally aware, to have control over our emotions, and to utilize emotions appropriately for effective problem solving, as well as managing our own emotional responses to stimuli. Social and emotional skills curriculum also helps foster appropriate pro-social behaviors in students who have been identified with deficits due to an underlying medical, mental, or emotional disorder. With increasing trends, more and more students are falling into such categories, yet seats for these programs are limited. The implementation of an all-inclusive social and emotional skills curriculum in the k-12 setting could provide essential life skills that many students may not have the opportunity to develop outside of the public-school setting. This could benefit society by potentially decreasing consequences, such as violence, domestic abuse, and worsening mental health conditions across a wide range of social settings, and increasing success rates in various silos of social welfare, such as employability, and community connectedness.
Thank you!

Special thanks to the BERKSHIRE HONORS SCHOLAR PROGRAM for underwriting this year's conference.

Visit www.berkshirecc.edu/honors to learn more about the Honors Program,

We’d also like to thank the following for their support of the Conference:

Berkshire Community College Undergraduate Scholars Conference Committee:
Reena Bucknell, Michele Darroch, Kari Dupuis, Stacy Evans, Timothy Flanagan,
Lauren Foss-Goodman, Patricia Kay, Wayne Klug, Jeremy LaCrosse,
Kevin McGerigle, Matthew Müller, Laura Saldarini, and Thomas Tyning

Audrey Sussman, Carl Maia and the BCC Culinary Program

The Academic Affairs Division

If you would like to share any thoughts or feedback about the Conference, please email Jeremy LaCrosse at jlacrosse@berkshirecc.edu.