Inaugural UNDERGRADUATE Scholars Conference

Friday, December 16, 2016
2:30PM–5:30PM

BERKSHIRE COMMUNITY COLLEGE
Welcome

This year Berkshire Community College (BCC) will host its Inaugural 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

LAURA SALDARINI is a native New Englander, raised in Connecticut. She lived in New York and New Jersey for fourteen years before relocating to Lenox, Mass. in 1999. After many years away from formal education, Laura returned to college, entering the Environmental Science Program at BCC in 2005. She was proud to be the valedictorian of the graduating class of 2008, earning an Associate in Science degree. In 2014, she graduated summa cum laude from Massachusetts College of Liberal Arts with a Bachelor of Arts degree in Interdisciplinary Studies. Currently, she is enrolled in a master’s program with Project Dragonfly and Miami Ohio University, working on her degree in field biology. She has worked in administration in K-12 education as well as at private and public colleges since 2000. Laura has been the assistant to the vice president for academic affairs at BCC since 2013.

Special Thanks

Special thanks to the Berkshire Community College Foundation for providing support through its Innovative Initiatives program.

These funds will be used to purchase a professional journal subscription for each student who has participated in today’s conference.
## Schedule

### Plenary Session in K-111

2:30pm  Welcome — Maura Delaney, Interim Vice President of Academic Affairs  
        Introduction — Jeremy LaCrosse  
        Keynote — Laura Saldarini

### Student Presentations in Hawthorne Hall

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### Poster Session & Reception in Koussevitzky Lobby

4:30pm  Elephants: Still in Crisis  
        LEIGHA CHAFFEE

Is Gun Control a Good Bang for Your Buck?  
BRYAN JONES

Early American Women & Their Fight For Equality  
ALLISON KAHN

Death of the Author  
ASHLEY MARTSEN

Biological Robots: Proteins as Technology  
DARWIN LAIN PHEARSON

South Congregational Church  
JESSICA TWING

Food Presentation by Culinary Students  
EVA DAILEY, EMMA BARILE & SAM SCHLEGEL
Presentations

PHIL BOWEN  
**Silva Obscura (The Dark Forest)**  
Faculty Sponsor: Steven Murray

Music tends to be more interesting when there is more complexity to it. In the creation of this project a simple, original piece of music was taken (written for solo piano) and expanded upon to make for a more interesting listening experience (written for a small orchestral arrangement comprised of trumpet, tuba, timpani, drums, piano, violin, and cello). The nature of this presentation will not be a slide show or poster, but rather an audio playback of the piece with music notation on screen accompanied by a short talk about the piece and how it came to be. Most research for this project was conducted during class through learning how to manipulate the program to achieve the desired notation. Other outside sources used include, listening to certain pieces of music as inspiration (Mussorgsky’s Night on Bald Mountain and The Great Gate of Kiev, Respighi’s Pines of Rome, and Tchaikovsky’s Symphony No. 6), researching proper order for written orchestral arrangement (which order the instruments appear on the page), as well as identifying specific instrument note range so as to avoid writing notes outside of an instrument’s ability to play. The result of this project is a fun, beautiful, and interesting piece of music to listen to, depending on the taste of the ear listening. After all, as the saying goes, “Beauty is in the eye of the beholder.”

M. TAYLER BROOKS  
**Timber Rattlesnakes: Conservation Through Better Understanding**  
Faculty Sponsor: Thomas Tyning

The Timber Rattlesnake (Crotalus horridus) is one of the most endangered vertebrates in the United States, let alone Massachusetts. It is crucial to gather as much information about the biology of such organisms as possible, and we thought it would be a worthy endeavor to gather data on the weight (g), snout/vent length (cm), tail length, subcaudal scale, and tail scale counts of neonate rattlesnakes to better understand their condition at this critical life stage and to allow us to identify the measured individuals as adults by outfitting each snake with a PIT tag. Snakes measured were between 24 and 29 cm long, had a tail length of 2 cm, had 176 to 180 subcaudal scales, and had 18 to 20 tail scales. There was as much as a 20% length difference in snakes measured, more than I anticipated at the onset of measuring. More data are needed to help us answer questions regarding the reproduction of this declining species, but we are hoping that a focus on neonates and their survivorship will allow us to make more informed conservation and management decisions in saving the Timber Rattlesnake.
KEN CONLOW

The Great Strand Spec-Fiction Debate
Faculty Sponsor: Nell McCabe

In my third semester I enrolled in a class taught by one of my mentors, Nell McCabe, called “Modern Fiction.” The course encompassed exploring fiction produced today in a variety of mediums — prose, film, television and visual arts, you name it. If it told a story, we discussed it. For a final project we were assigned the task of producing a work that addressed Modern Fiction in some way, shape, or form. I am a comics artist. I decided to do a piece that would explore the history, and influences of speculative fiction from roughly 1950 to the early 1980s in a graphic narrative form. I am well-versed in both the comics, and science fiction forms. I knew the touchstones I needed to cover. My job was to present it in an informative, literary, and entertaining way. I did the research; which meant getting the facts straight, and when drawing the tale, to get the likenesses of the pertinent writers and editors recognizable. In doing this yarn I decided to make it a work of speculative fiction itself. I used my own recurring character, Joe Bleak, as the fulcrum on which this quasi-history turned. I also used my good friend Charlotte as the foil for what Joe was trying to explain. The tale I created, I think, I hope, enchanted and informed my audience. It, hopefully, exposed the history of science fiction as it evolved from escapist literature to an on-going comment on the world as it is.

ETHAN DYER

Cognitive Development of Infants & Toddlers
Faculty Sponsor: Patricia Kay

The cognitive development of both infants and toddlers are crucial aspects of further growth and development as the child gets older. It is in these two crucial phases that a child will begin to learn the basics of socializing, problem solving, and compromising that will continue to develop as the child becomes more refined in speech and movement. Cognitive development is also very important to the growth of both fine and gross motor functions. Infants come into this world with the tools necessary to learn and process information around them. Caregivers and parents play an important role in helping the infant grow during this process by being engaging and providing an environment for them to learn in. The refinement of these skills allows for the child to partake in play, an important part in any stage of development. Using the ideas that multiple theorists in the field have developed over centuries, these papers tie together an overall theme of the importance of a supportive community for the healthy cognitive development of a young child. It is through these theories that an overall picture begins to emerge, that a child’s brain is far more complex and active than it appears. Infants and toddlers are learning many skills at an alarming rate, taking in complex actions and ideas that we as adults take for granted. It is through all these theories that one truth is known; that the cognitive development that takes place during infancy and with the toddler are the most important steps to becoming a well-rounded adult.
**JUSTIN GRAEFF**  
**Atypical-Sized Bald-Faced Hornet Queens**  
Faculty Sponsor: Thomas Tyning

The bald-faced hornet, Dolichovespula maculata (L.), is the largest yellowjacket found in North America. The bald-faced hornet is a common yellowjacket found in the forests and meadows of the Eastern U.S. They prefer to have colonies in high trees, due to their inflexibility of habitat, but are also known to be in urban areas. The study was done in North Adams Massachusetts in the fall of 2016. One colony of D. maculata was located for research. The nest was located on an eave of a landowner's building. Removal of the nest determined an estimated population size at that time. Nest structure, location, and size were recorded. Size of individuals were measured and atypical sizes of queens were found. Further research will be required to understand why the queens were atypical.

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**ALEXANDER GRIFFITH**  
**The AstroShire County Project**  
Faculty Sponsor: Thomas Tyning

This project is a venture to bring the solar system to a scale that allows the planet's orbits to land within Berkshire County. The reason for this project is to help people fathom the massiveness of outer space. This venture is significant, because it has given people a new way of viewing our astronomical neighborhood. To make this project possible, the solar system needed to be brought to a new scale that would fit in Berkshire County. To do this, a ratio was made: one mile equals the distance from the Earth to the sun. After that, somewhere in Berkshire County had to be the sun in order to find the center point of measurement. The Mount Greylock tower was selected, because its diameter is to scale with the sun. Then the distances of the planets were measured and plotted on a map of Berkshire County in miles using the precision of Google Maps. The results were fascinating. If the Greylock tower were the sun, Jupiter would be in the center of Cheshire the size of a five foot beach ball. Mars would be the size of a baseball on the slope of Mount Greylock and Neptune would be the size of a yoga ball hovering over Great Barrington. In conclusion, the project was a success and many more interesting findings were made. An online blog for the project has been created so that anyone can view the project's results as maps and statistics at astroshire.blogspot.com.
**BRIAN HAILES**

**Mahler, Wagner & Anti-Semitism**  
Faculty Sponsor: Ellen Shanahan

The views and publications of German composer Richard Wagner (1813–1883) provided anti-Semitism with an aura of intellectual legitimacy in nineteenth century Europe. It was into this environment that the Austrian Jewish composer Gustav Mahler was born in 1860. Drawing on books, articles, and critical reviews over the past one hundred and fifty years, this presentation explores a brief history of anti-Semitism, the influence of Wagner, and its effect on Mahler’s life and career. Hatred, discrimination, and mistreatment of Jews date back to the earliest days of Christianity. While Jews and Christians have often lived together peacefully, there are many examples of anti-Semitism, sometimes extreme, throughout their joint history. The Enlightenment saw an intellectual move towards religious tolerance but an undercurrent of anti-Semitism was always present in European society. Wagner is important for a number of reasons. First, his views were extreme, although certainly not out of line with many others of the time; second, he wrote about them in great detail; and third, he was such an influential figure in the arts. Anti-Semitism had a significant impact on Mahler’s life and career. Topics covered in this presentation include the obstacles he faced in building his career in late nineteenth century Vienna, his complex and difficult marriage to Alma Schindler, his musical refuge in the United States, his return to Vienna and death at age fifty, and finally the growth of his legacy and reputation during the turbulent twentieth century.

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**JAHN KEFA**

**Special Concern for the Wood Turtle in Northeastern North America**  
Faculty Sponsor: Thomas Tyning

The Wood Turtle (Glyptemys insculpta) is listed as a Species of Special Concern in Massachusetts, indicating that conservation biologists recognize that it has undergone widespread population declines and is vulnerable to continued losses. Population decrease is attributed to habitat fragmentation, damage from agricultural machinery, highway mortality, and removal of individual turtles by poachers. Recent publications outline current and past population levels and the authors have made recommendations to conserve wood turtles. The Field Methods course at BCC is one small part of an ongoing effort to focus on this species. Data collected by our group is submitted to state and other conservation agencies in an effort to add to information that may be useful. Students followed three free-roaming wood turtles from September to mid-December in Pittsfield, using radio telemetry. We collected weather and other environmental data four days a week. In addition, we recorded geographic data (latitude and longitude) and habitat use. Among other goals, students were to learn about the methods used in data collecting and processing for biological field studies in the natural sciences and how to operate and apply them. The main objective for this presentation is to demonstrate the home range size and wintering behavior of the wood turtle. I will also describe turtle activity, general behaviors, and environmental requirements for this species.
ALICIA STARSJA

Service-Learning at Project Reconnect
Faculty Sponsor: Kari Dupuis

Our country, as well as our local community, has a very high rate of teens that fall through the cracks. Unfortunately, this contributes to high school dropout rates, teen pregnancies, gang participation, hunger and homelessness, drug and alcohol abuse, juvenile delinquency, and/or detention, and even death. We need to provide services to help these young adults at a very crucial time in their lives, assisting them in bridging the gap and giving them the tools and knowledge to have a successful future. After all, these teens are our future and we need to invest in them. I chose to take advantage of service learning in my Community Resources class with Kari Dupuis, which I am very grateful for because without that I wouldn’t have the knowledge I am sharing today. From the very first day of walking through the door at BCAC’s Project RECONNECT, I knew just how devoted and committed this small, but very large-at-heart group was to helping with the regrouping and support our local young adults require. According to Berkshire Community Action’s website, “Project RECONNECT provides reentry services to the inmate population in the form of: on-site pre-release support and counseling, discharge planning, post release education and housing support services, on-going mentoring supports, job search support and employment referrals” (Project RECONNECT). Their staff goes above and beyond these few listed supports, and if they can help, and it is within reason, they are always right there to encourage and support these youth in any way possible.

Posters

LEIGHA CHAFFEE

Elephants: Still in Crisis
Faculty Sponsor: Julianna Spallholz

Just like humans are either left or right-handed, African elephants prefer one tusk over the other. Unfortunately, they have been slaughtered for centuries for their beautiful incisors. Elephants are unjustifiably assassinated at an alarming rate solely for human luxury. Ivory is not important enough to justify slaughtering this majestic creature. This “ecologically crucial” species is in serious danger of becoming extinct if poaching does not end. The possibility of extinction has been known for decades and laws have been implemented to prevent such a thing from happening, yet elephants are still in extreme danger. Without elephants, the savanna ecosystem will be obliterated. Countless other species, including humans, rely on elephants and would be in serious danger without them. The whole continent of Africa will prosper with the survival of elephants rather than their extinction. The world needs to be educated to put an end to poaching the largest land mammal on earth. Future generations need to experience this wise, intelligent, nurturing, and kind-hearted species.
Is Gun Control a Good Bang for Your Buck?
Faculty Sponsor: Paul Johansen

Whenever we tune into a "reputable" news outlet, we can't help but be bombarded by constant gun violence hysteria. But is there any truth to gun violence being the epidemic that the President, many politicians, the Brady Campaign, and media portray it to be? Ultimately, we need to look at the statistics to see if indeed this is an "epidemic" or if it is overly dramatized. My hypothesis is that there is no significant difference in firearm related homicides in states heavy in gun control compared to those that are far more lenient. To test my hypothesis, I first took data from the CDC and FBI for 2014. From there I figured out the percentage of homicides committed by firearm in each state. I researched data from various legal sites at the top 11 states for gun control and also the opposing 11 states with the most lax gun laws. For my 11 most restrictive states — California, Connecticut, Delaware, District of Columbia, Hawaii, Illinois, Maryland, Massachusetts, New Jersey, New York, and Rhode Island — the sample mean of homicides caused by firearms was 62%. The mean for the more lenient states — Alaska, Arizona, Kansas, Kentucky, Mississippi, Missouri, South Dakota, Texas, Utah, Vermont, and West Virginia — was 59% of homicides caused by firearms. The states with less gun control fared better overall than those with strict ownership guidelines.

Early American Women & Their Fight for Equality
Faculty Sponsor: Matthew Müller

As a feminist, I have always been interested in the progression of women’s equality in America. Throughout my journey at BCC, I have taken classes such as Western Civilization and Sociology that have contributed towards my knowledge of the fight for women’s equality. By analyzing pieces of early American literature, I gained an understanding of the lives of American women through the observations and experiences of writers like Anne Bradstreet and Fanny Fern. Also, by analyzing pieces of literature that were intended to help advocate positive social change for women, such as speeches that were read by Sojourner Truth and Matilda Joslyn Gage, I became aware of the National Women’s Rights Conventions, which became the backbone of the women’s rights movement. These conventions gathered diverse crowds and speakers together to share their words and support. While many of these women faced criticism for even picking up the pen, their bravery and literary competency helped them spread the message that women and men deserve to share the same equal rights.
ASHLEY MARTSEN

Death of the Author
Faculty Sponsor: Nell McCabe

Designed to highlight Roland Barthes’ concept of the Death of the Author in a format that is considerably easier to conceptualize than an essay, this meta-fictional project centers on a fictional author from a small town and the fictional found text dialogues and reactions that result following his death. The responses of the townspeople serve as metaphors for such things as uncovering the true meaning of a text, the relationship of an author’s history to the text, and the inability to change a piece of literature once it has been published. The response of the townspeople is presented through an interconnected series of fictional contemporary dialogues including conversations over social media sites such as Facebook and Twitter, along with text message exchanges. The exchanges happen between friends, siblings, and other such people who knew the author and feel entitled to express their opinions following his death. For authenticity, newspaper clippings, police reports, and an obituary are included; but the central part of the project is the dialogue of the townsfolk or readers in response to the death of their beloved author. The project transforms Barthes’ abstract concept into a visual metaphor that clarifies the relationship between a text, an author, and his readers.

DARWIN LAIN PHEARSON

Biological Robots: Proteins as Technology
Faculty Sponsor: Gina Foley

Proteins are tiny robots that control everything in your body. When you need to get oxygen from your red blood cells to your brain, a protein does it. If you need to heal a wound, a protein sends that signal. Some researchers have written on the similarities of robots and proteins, and their work in scholarly journals and textbooks relating to either proteins or robotics, shows their properties to overlap. Proteins are made up of several smaller parts arranged in a specific way and they have functions unique to their structure. They use or apply power, and are capable of carrying out complex actions automatically. These qualities make them, by definition, not only machines, but robots. In this presentation I will explore some of the myriad of clinical applications of proteins. Proteins can be produced or repurposed to serve desired functions. Some projects in development and currently on the market include proteins that can clean the plaque off of the brains of Alzheimer's patients, proteins that slow aging, and proteins that can identify cancer-causing mutations in gene therapies. Presently, proteins and protein chains like insulin are used by people all around the world. The future possibilities of these biological robots could be even more extraordinary. I believe there is a yet-to-be-discovered protein which, when combined with stem cell therapies, will act as a delivery system for stem cells. This could reduce or eliminate undesirable differentiation (stem cells becoming something unintended), which could potentially revolutionize orthopedics, and lead to cures for degenerative diseases.
Locally, we have families that are surviving on very little income, if any. The South Congregational Church is unique and is open to anyone regardless of race, gender, ethnicity, and they are even open to other religions. On average, about sixty to one hundred people are served Wednesday nights at South Congregational. Showing acceptance while being open-minded is how the site operates. With our nation as broken and torn as it is, it is amazing we have local groups that are willing and able to assist other groups in need. As a human service student, Service-Learning has taught me things a book could not, such as compassion and integrity! With hunger impacting so many individuals locally, that should tell us as a community that we need to do more together and unite. Whenever possible, I make contact with people at meals to establish a relationship just by letting each person know someone cares. Hunger, is an issue that could be solved locally. With the help of many volunteers, there is already a great start. Presenting on local hunger is of importance to the production and acceptance of a community. In a community that is falling farther down as jobs continue to close or move, Pittsfield has potential, and is full of good individuals. Encouraging individuals to help get involved, allows for skills and growth, and also allows us to map out what else is needed. Sharing my knowledge is already a start to promoting awareness, for those who may not understand the full impact of “Hunger.”

Thank you!

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

Berkshire Community College Undergraduate Scholars Conference Committee: Reena Bucknell, Michelle Darroch, Kari Dupuis, Stacy Evans, Lauren Foss-Goodman, Patricia Kay, Wayne Klug, Jeremy LaCrosse, Kevin McGeagle, Matthew Müller, Charles Park and Thomas Tyning

Audrey Sussman, Carl Maaia 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 jalacrosse@berkshirecc.edu.