The Cormier Honors College thanks you for supporting the

Spring 2016 Celebration of Scholarship

Longwood University Cormier Honors College is proud to present the

Spring 2016 Celebration of Scholarship

April 19, 2016
3-5pm, Nance Room
Enhancement Projects

Derivation of Kepler’s Laws of Planetary Motion with Vector Calculus
By Walter Coleman with support from Dr. Tom Wears (MATH 361)
Before Sir Isaac Newton published his *Principia Mathematica* in 1687, Johannes Kepler derived three laws of planetary motion. The first of these laws states that planets revolve in an elliptical orbit around the Sun with the Sun being one focus. The second law is that the line from the planet to the Sun sweeps out equal areas in equal times. The third law states that the period of revolution of a planet squared is proportional to the length of its major axis cubed. Although calculus had not been invented yet, Kepler was able to prove his laws using geometry. Today, these laws can be deduced using vector calculus, which is exemplified in this project. Additionally, the project investigates the orbit of Earth around the Sun and the orbit of a satellite around the Earth using Kepler’s laws.

Richmond’s Emek Sholom Holocaust Memorial: Local Stories and a Local Site of Memorial.
By Megan Scott with support from Dr. Melissa Kravitz (HIST 490)
The poster is representative of the independent research I am conducting regarding the Emek Shalom Holocaust Memorial in Richmond, VA. This poster is about the memorial itself and how it is represented in the Richmond community as well as its functionality. The information and argument on the poster come from a paper I co-wrote and co-presented at the Southeast German Studies Colloquium in Charleston, SC in March.

Bottled versus Tap Water: The environmental consequences of your choice
By Edel Nyland with support from Dr. Dina Leech
This project investigates the choice Americans make to use disposable plastic water bottles in place of tap water and the environmental repercussions of this decision. Specifically, the project examines the reasons Americans choose bottled water over tap water, highlighting some of the misconceptions about tap water. The project then presents the associated environmental consequences of this choice, which range from increased exposure to environmental toxins to the accumulation of plastic debris in our oceans.

A History of the Band Programs in Charlotte County
By Lucas Whirley with support from Dr. Charles Kinzer (MUSC 332)
Instrumental music has been a prominent part of the curriculum in Charlotte County for decades. The schools included in this discussion are Randolph-Henry High School and Central High School. Topics covered are from Randolph-Henry’s creation in 1943 until the present day. Resources include archival documents, photographs, and oral history interviews.

Warm Ups in the Classroom
By Alison Roberts with support from Ms. Ronda Scarow (THEA 448)
Every student learns differently. Theatre warm ups can be used to help students who have different learning styles and intelligences. Students with disabilities can also benefit from the use of warm ups.

The Waiting Game – A multimedia, longform sports journalism piece
By Halle Parker with Support from Dr. Jeff Halliday (COMM 360)
My longform piece, supported by the online platform, Medium, includes interviews with both student-athletes and administration from the Longwood athletics department. The pieces involved discuss the psychological effects of injuries on athletes and how Longwood can better support their athletes mentally. The piece incorporates images and videos to better exhibit the article’s content and connect the reader to the story.

Immunotherapeutic Approaches for Pancreatic Adenocarcinoma
By Sarina Hartman with support from Dr. Amorette Barber (BIOL 410)
I studied the emerging application of utilizing immunology to find effective treatments for pancreatic cancer, which has the highest mortality rates of all cancers. There have been many studies and experiments testing the use of immunotherapeutic methods as more efficient treatments for various cancers and promise has been found in cancer vaccines, monoclonal antibody therapies, and immunotoxin therapy targeting the mesothelin antigen. Mesothelin is a differentiation antigen highly expressed in pancreatic cancer cells, along with some other forms of cancer, that serves as a target for these immunotherapies. By applying what I have learned in immunology, I also present a new possible therapeutic approach which could help increase the survival rates of individuals diagnosed with pancreatic cancer.

The Social Structure of Sport in the United Kingdom
By Sarina Harman with support from Dr. Jake Milne (SOCL 251)
While studying abroad in the United Kingdom, specifically Scotland and England, I took notice of the social and physical structures of places we visited along how it connected with the sport we were studying. I noticed a definite connection with the social structure of the sports with the environments they were located, as well as the sponsorship and fans they were tailored towards. Elite sports, including golf, tennis, and cricket, were held in rich, exclusive environments, while rugby and soccer matches, which are considered sports for the masses, occurred at more approachable locations. There was also blatant difference in the fandom of soccer versus rugby due to the highly regarded code by which rugby is played.
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**Potential Impacts of Cover on Native Piedmont Crayfish Cambarus sp. C. Predation on Native Eastern Mosquitofish**

By Shane Crean with support from Dr. Sujan Henkanaththegedara (BIOL 341)

I studied the effect of crayfish predation on the survival rate of mosquitofish with and without cover. The organisms used in my experiment was Native Eastern Mosquitofish Gambusia holbrooki and the Native Piedmont Crayfish Cambarus sp. C. The experiment was run in the lab for 10 days and observations were made once everyday on the survival of fish. The fish without any crayfish in the tank had the highest survival rate, the fish with crayfish and no cover had the 2nd highest survival rate, and the fish with the crayfish and cover had the lowest survival rate.

**Cyber Forensics: The Study of Artifact Recovery**

By Tyler Chuba with support from Dr. Linda Lau (ISCS 377)

The Black T-shirt Cyber Forensics Challenge is a free, annual contest, designed to address a variety of elements important in conducting today’s forensics examinations, incident responses, and intrusion analysis. This case study is a complex analysis of a simulated data exfiltration in which documents, credentials, and company secrets are believed to be compromised.

**The Difference: Analyzing the Importance of Awareness in Creative Writing**

By Joel Worford with support from Dr. Brett Hursey (ENGL 317)

In this presentation, I will outline the skills that great poets possess that allow them to write effective poetry. The focus of my thesis is on the awareness that writers must have, specifically in applying specific skills to poems in order to enhance the individual work as opposed to “showing off” the writer’s talents. This awareness will be exemplified in five American poets’ works, which I will analyze to support my argument. Through this enhancement, I have learned not only how great poets apply their skills, but also ways in which I can affect my own works with a greater self-awareness that will make them more effective.

**Newton’s Method**

By Alexandra Jolly with support from Dr. Tom Wears (MATH 481)

A dynamical system is a system whose position in space evolves over time dependent upon a fixed rule. Newton’s method is used for finding roots of polynomials, both real and complex. This enhancement explores Newton’s method and fixed points and their characteristics.

**“Everything in Life Relates to Canoeing” – Outdoor Adventure Skills**

By Emily Gallilugh with support from Mr. Gus Hemmer (RECR 340)

At Longwood University, there are many opportunities to go beyond a typical lecture classroom and into the world, learning skills that we will take with us long after we leave this place. The last four months have been spent orienteering, rock climbing, and canoeing, learning skills and gaining knowledge far beyond a textbook could ever teach. The 15 weeks spent in the woods, on the side of cliffs, and in lakes and streams are all documented in a 10-minute video, encompassing the authentic and non-traditional learning environment that will make just about anyone want to get outside, get their hands dirty, and learn about the world around us.

Video Link: https://www.youtube.com/watch?v=9TgTdrN-18

**Individualism-Collectivism and Mental Illness: Ties between Western and Asian cultures’ individualistic or collectivistic orientations and their attitudes towards mental disorder.**

By Hannah Auerbach with support from Dr. Chris Bjornsen (PSYC 384)

Stigma towards mental deviance and distress is, to varying degrees, a major impediment for mental illness prevention and treatment throughout the world. Despite considerable research, there are no conclusive theories explaining why some cultures hold more or less stigma than others. Individualism-Collectivism is often studied as a possible explanation for the tendencies of some countries to stigmatize mental illness more than others. In this literature analysis, research on this topic in various Asian and Western (Western European and North American) countries is reviewed in order to analyze the individualism-collectivism approach and uncover alternative factors which influence countries’ attitudes towards mental illness.

**Introduction to Discrete Dynamical Systems**

By Sabrina Walker with support from Dr. David Shoenthal (MATH 362)

Dynamical systems is a branch of mathematics that attempts to understand the continuous and discrete processes in motion. This study focused on discrete dynamical systems and their general properties, such as orbits, fixed points, and periodic points.

**United States’ Foreign Policy in the Middle East**

By Megan Scott with support from Dr. David Coles (HIST 308)

This poster is a reflection of the latter half of my United States Diplomatic History class and our discussions and readings on the US foreign relations in the Middle East. It depicts how past foreign policy decisions have influenced present day policies in the Middle East. In addition, it references how 9/11 has affected all future foreign policies and how it impacted the United States.
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**Homeowners Risk Averse Reaction to the Recession**
By Tyler Box with support from Dr. David Lehr (ECON 318)
There has been significant statistical research done on the effectiveness of offering home warranties on homes being sold in the housing market. The current research has focused on their impact on price and time on market and typically find that the inclusion of a home warranty is not statistically significant to either variable. This study and dataset differ from those of the past because with it the changing value of home warranties can be captured by comparing homes from both before and after the recession. The results confirmed earlier work that in general home warranties are statistically insignificant to sales price. They also stated that during a recession they increased the sales price of a home by more than one thousand dollars. Weighted least squares regression analysis was used to estimate this relationship.

**Investigating the Fluorescence inside of a Glowstick**
By Michael Crisp with support from Dr. Benjamin Topham (CHEM 401)
My project consists of studying the fluorophores within a glowstick in order to better understand their fluorescent properties. By doing so, I am gaining a further knowledge on how fluorescence works and why it is useful in glowsticks.

**Collaborative Piano Recital**
By Leah Parr with support from Dr. Lisa Kinzer (MUSC 382)
This enhancement is a collaborative arts project between several musicians. Collaborative piano is a relatively new discipline, which allows for more respectful recognition of accompanists and pianists, and further study into works for the piano and another instrument. Hands on exposure by creating music and performing it, as well as working with professional collaborative pianists, has given me valuable experience in collaboration and has allowed me to explore this discipline as a possible graduate school study and career option. I will be presenting the final product, the recital, on Sunday, April 24th at 3pm in Wygal Hall.

**Boko Haram**
By MacKenzie Adamson with support from Dr. William Harbour (POSC 345)
Boko Haram is a terrorist organization centralized in Nigeria that originated as an Islamist movement against western education, and eventually morphed into an armed insurgency. While Boko Haram was only formed in the early 2000s, it is responsible for the deaths of hundreds of people, and the kidnapings of hundreds of schoolgirls. This presentation seeks to explore the evolution of Boko Haram, the development of Nigeria, and the authority of the government to determine possible resolutions to the atrocities that the Nigerian people encounter.

**Organizing a Choral Music Program**
By Joshua Ellis with support from Dr. Pamela McDermott (MUSC 442)
For my enhancement project, I have researched how choir directors put together high school choral programs, and I have studied what information needs to be passed to students and parents regarding these programs. To do this, I have observed numerous high school choir handbooks, taking note of the categories of information that are most often shared between them and the intended structure and goals of their respective programs. Using this information, I have also written my own choir handbook for a hypothetical choral program, compiling the common trends of the handbooks I observed as well as my own unique ideas.

**Wellness Comparisons Between University Students and Employees**
By Molly Kabis with support from Dr. Saunders (KINS 480)
149 university students and employees participated in a study that compared wellness factors between the two groups. It was found that, although there was an average age difference of about 20 years between students and employees, most of the other factors analyzed were the same, including height, weight, body mass index (BMI), aerobic test duration, and self-reported physical wellness. The only significant differences between the two groups were observed among self-reported intellectual wellness and aerobic test rate of perceived exertion (RPE).

**Learning to Blog about Neuroscience**
By Marissa Duryee with support from Dr. Catherine Franssen (NEUR 151)
To enhance Introduction to Biopsychology (NEUR 151), the goal was to write two blog posts for Dr. Franssen’s Huffington Post blog site. What emerged, however, was the foundation for more than 4 posts and a potential significant research project. In this poster, I'll review the process of blog writing and lessons learned from biopsychology research.

**Parental CPR Training**
By Christina Mertz with support from Dr. Linda Minor (NURS 350)
In an ideal world, every bystander would be able and willing to perform CPR if needed. In reality, however, many people lack the knowledge and skills to provide such life-saving support. Parents of newborns are relatively likely to need to use CPR, so a program to teach them basic CPR before discharge could prove to be a life-saving intervention. This poster presentation addresses current research on bystander CPR and proposes a plan to implement a basic parental CPR training program at Centra Southside Community Hospital in Farmville.
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Mental Health in the Peruvian Amazon
By Keaton Unroe (Winterim in the Amazon)
Through the National Collegiate Honors Council's Winterim in Peru program, I visited the Peruvian Amazon to research a health topic that has very little coverage in that area of the world: mental health. The purpose of this investigation was to determine the prevalence of mental health disorders in the Peruvian Amazon. In addition, we hope to better understand what treatments to mental health problems exist, as well as identifying and comparing modern treatments (e.g., antidepressants and other medications) and traditional treatments (e.g., going to a shaman, healer, or using herbs) that are available. Lastly, this investigation was used to determine the prevalence of mental health disorders and types of treatments that are available in Iquitos, Peru (an urban area) compared to rural communities on the Amazon River. Individuals were interviewed and self-reported their experiences and knowledge of mental health problems in Peru.

Handshake: Forming Successful University-Museum Alliances
By Mary Zell Galen with support from Dr. Larissa Fergeson
In recent years, mutually beneficial university-museum partnerships have increased throughout the United States. Studying university-museum partnerships' financial, educational, and community engagement success will provide a contrast between solely university-controlled collections and smaller public and private museums. Additionally, negative aspects of the partnership for one or both parties, such as mismatched values and primary concerns, will also be reviewed. An exploratory case study for this research, the Robert Russa Moton Museum and Longwood University partnership, will highlight necessary planning and community support needed for a successful alliance and discuss areas for improvement. With the assistance of this study, prospective partnership members will potentially gain insight in methods to build or improve upon their own university-museum partnership.

Kennedy, Eisenhower, and Krushchev: The Bay of Pigs Invasion and the Cuban Missile Crisis
By Emily Williams with support from Dr. David Coles (HIST 308)
Krushchev, Kennedy, and Eisenhower were arguably three of the most powerful leaders in a strenuous time in world history. The Cuban Missile Crisis and the Bay of Pigs Invasion were where these three leaders came toe-to-toe and were on the edge of a nuclear war. This paper examines the leaders and those two events to better understand the Cold War.

Discovering Conflict Styles
By Marcia Logsdon with support from Dr. Kris Paal (COMM 366)
Conflict styles are the behaviors that we use when we are dealing with a conflict. There are 5 different conflict styles that derive from a scale of assertiveness and cooperation. These styles include competition, avoidance, accommodation, compromise, and collaboration. In order to resolve conflicts in our lives, we use certain communication skills related to these styles. By using clips from the show Friends, examples and explanations of the different conflict styles were provided in order to simplify and relate the conflict styles for students to easier understand.

Are we selecting for ‘superbugs’ in our teaching laboratories?
By Mahelet Mamo with support from Dr. David Buckalew (BIOL 304)
This project examines the degree of sensitivity of bacteria isolated from sink surfaces near soap dispensers within the Chichester Science Center to a commonly used antibacterial chemical. Pure cultures of two different Gram-negative bacteria were obtained from swab samples collected at sink surfaces within teaching labs on the 2nd and 3rd floors of Chichester. The two isolates were exposed to the recommended concentration range of 2-Methylisothiazol-3(2H)-one (MIT), the active ingredient found in antibacterial soaps (GoJo® Akron, OH) used in Chichester. The results from disk diffusion tests suggest that our two bacterial isolates show greater resistance to MIT at and beyond the recommended concentrations for hand soaps as compared with a suitable control. This and other studies suggest that substances used in antibacterial soap products are directing bacterial evolution in the direction of antibacterial resistance.

Technological Resources for the Middle School Classroom
By Emily Pleasant with support from Dr. Gretchen Braun (EDUC 452)
This presentation was designed to open doors to new technology for current middle school teachers, as well as to prepare prospective teachers, like myself, for the workplace that is becoming entirely digital. Most students have 1:1 technological devices, and even if this is not the case, they have computers readily at their use. This presentation is interactive and contains a variety of technological resources that are applicable for middle school students and teachers.

Abortion: The Ethical and Moral Approach
By Teresa Fuchterman, Brianna Kelly and Kelly Ward with Support from Dr. Mark Lukas (PHIL 315)
Every decision in life can be made through moral and ethical reasoning and rationalization. Metaethics, normative ethics, and axiology are all big picture categories for ethical questions. These groups help create clear pathways and arguments for or against an act token. Biomedical ethics, a subcategory, follows these criteria as well especially when addressing the controversial topic of abortion. Abortion is “deliberate removal (or deliberate action to cause the expulsion) of a fetus from the womb of a human female, at the request of or through the agency of the mother, so as in fact to result in the death of the fetus” (Objections). After analyzing biomedical cases, the arguments for, and the arguments against, our paper finds abortion morally and ethically wrong depending on the certain case at hand.
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A Comparative Study of the Communities of Galway, Ireland and Farmville, Virginia
By Jessie Hoover with support from Dr. James Jordan (ANTH 355)
The purpose of this study is to examine the cultural features of Galway, Ireland in comparison with the Farmville, Virginia community. Globalization has played a key role in the effects of 'Westernizing' cultures, so does this mean cultures pushing towards modernity are at risk for morphing into one mega-culture?

Supply Chain Analytics: What is it and Why is it so Important?
By Kassie Fralick with support from Dr. Richard Monroe (MANG 495)
Many people think analytics in the business field have to do with customers and their buying habits, demographics, etc. However, supply chain analytics is a relatively new field of study, and it focuses more on just the customer. Kassie Fralick researched articles discussing supply chain analytics in three related journals, Journal of Business Logistics, Production & Operations Management, and Journal of Supply Chain Management. This exploratory research was analyzed and then compiled into a table that allows the reader to view the different areas that supply chain analytics looks at, as well as other important factors seen throughout these articles, in order to determine where new research should be focused.

Assistive Technology & Autism
By Jennifer Trate with support from Dr. Royal Gurley (SPED 411)
Assistive technology (AT) can be anything that is used to increase, maintain, or improve the functional capabilities of a child with a disability. There is a wide continuum of assistive technology, and not all types of AT are appropriate for all children with disabilities. Autism is a developmental disorder that affects more than 3 million people in the U.S. alone, and there are many different strategies and types of assistive technology that can help these children with autism reach their full potential.

Presence of Community Policing at Longwood
By Rebecca Doody with support from Dr. Danette Gibbs (PSYC 380)
My project is geared to determine the presence of community policing at Longwood University by comparing Longwood University Police Department (LUPD) policies with community policing components, as well as seeing individual perspectives on LUPD's practices. I interviewed members of the LUPD and sent out a survey to students in order to see their perspective of the work done by the LUPD to gauge community policing presence. My project reports these findings, as well as gives possible actions for the LUPD to consider in order to increase their community policing tactics.