



# Christopher Newport University Celebrates Faculty Scholarly Activities And Success

CHRISTOPHER NEWPORT UNIVERSITY

# SCHEV Outstanding Faculty Awards

**The State Council of Higher Education for Virginia**
***presents***

## THE 38TH ANNUAL VIRGINIA

# OUTSTANDING FACULTY AWARDS

**March 5, 2024**
Lewis Ginter Botanical Gardens

**Sponsored by Dominion Energy**

CHRISTOPHER NEWPORT UNIVERSITY

The State Council of Higher Education for Virginia

# The 38th Annual Virginia Outstanding Faculty Awards

Sponsored by Dominion Energy

## Welcome

Dr. Alan Edwards
Interim Director
State Council of Higher Education for Virginia

## Remarks

Mr. Hunter A. Applewhite
President
Dominion Energy Charitable Foundation

Mr. Nicholas Kent
Deputy Secretary of Education
Commonwealth of Virginia

## Presentation of Awards

Mr. Jason El Koubi
Council Member
State Council of Higher Education for Virginia

Ms. Delceno Miles
Council Member
State Council of Higher Education for Virginia

## Guest Speaker

2023 OFA Recipient
Prof. Julie McConnell

## Concluding Remarks

Dr. Alan Edwards

CHRISTOPHER NEWPORT UNIVERSITY

# Tarek Abdel-Fattah

Professor of Chemistry
**Christopher Newport University**

Tarek Abdel-Fattah is the Lawrence J. Sacks Endowed Professor of Chemistry at Christopher Newport University and the CNU director of the Applied Research Center at the Thomas Jefferson National Accelerator Facility. Dr. Abdel-Fattah's work concerning nanotechnology for aerospace applications has been recognized by NASA, and he twice received NASA faculty fellowships. He was the first recipient of CNU's Annual Faculty Award for Excellence in Scholarship in 2012 and the College of Natural & Behavioral Sciences Award for Excellence in Teaching and Mentoring in 2019. In addition, he received the Outstanding Mentorship Award from the Chemistry Division of the Council on Undergraduate Research in 2021. Dr. Abdel-Fattah holds B.S. and M.S. degrees in chemistry from Alexandria University, Egypt and a Ph.D. in inorganic and materials chemistry from Northeastern University in Boston.

# John Finn

Associate Professor of Geography
**Christopher Newport University**

John Finn is an associate professor of geography and chair of the Department of Sociology, Social Work and Anthropology at Christopher Newport University. His research examines racial capitalism, critical landscape studies and environmental justice to better understand the ongoing economic, environmental and health impacts of persistent racial segregation in the United States. For the last four years he has directed a project entitled, *"Living Apart: Geography of Segregation in the 21st Century,"* which uses oral history interviews, experimental photographic methodologies, historical and archival research and interactive mapping to trace the history of how overtly discriminatory federal housing policy created structures of racialized inequality in housing that continues to produce and perpetuate profoundly unequal urban and environmental outcomes. Dr. Finn holds a Ph.D. in geography from Arizona State University.

# Supporting K-12 Teacher Well-Being

**Tim Pressley, Ph.D.**

**Department of Psychology**

My journey into educational psychology began with my experiences as a fourth-grade teacher and was further fueled by my wife's work as a teacher. These experiences exposed me to the challenges faced by educators and inspired me to research the impact of educational policies on teachers. My current research focuses on teacher well-being and burnout, with the goal of giving teachers a voice in decisions that affect their work.

In 2020, my wife was a reading intervention teacher at an elementary school and worked with small groups of students to improve their reading skills. Thus, when schools moved online in March 2020, I had a front-row seat for the virtual classroom experience. I saw my wife set up at our dining-room table for her reading groups and hoped her students would log on for their daily small groups. My wife worked to engage her students virtually for every lesson and check in with her students to learn how they were coping throughout this challenging time. I also saw firsthand my wife getting online at all hours of the day and night just to make sure she connected with students who had missed their group time for any number of reasons—say, because they had to share tablets with brothers or sisters or because their parents or guardians were not available to help them log on to the virtual system. I also saw former teachers I had worked with and former students who had become teachers commenting on social media about their challenges. These experiences fueled my research on the impact of the COVID-19 pandemic on teachers.

As schools move beyond the pandemic, my work on sharing teacher perspectives has not ended. During the 2023-2024 school year, I have focused on teacher well-being and burnout. This has included research on teacher morale and mental health at the end of the 2022-2023 school year, exploration of teacher burnout, and understanding teacher dedication to staying in the profession. Additionally, I had two articles that focused on teacher self-efficacy during the pandemic. These articles explored how teacher self-efficacy of first-year teachers changed throughout their first full year in the classroom and the role of personal accomplishments on teacher self-efficacy during the pandemic. Beyond my published work, I have begun to develop a new teacher

professional well-being scale with colleagues from Auburn University and George Mason University. We have piloted the measure online and with a local school district this year. Tying into developing this instrument we are also exploring why teachers are leaving the profession and what schools can do to support teachers better and limit teacher attrition. These projects will include Christopher Newport University undergraduates in the upcoming school year.

## Sabbatical Research 2023-24

Dr. Kip Redick

In the fall of 2022, I applied for a sabbatical to involve a long-distance hike of the Continental Divide Trail in the summer and fall of 2023. In 2011 I received a sabbatical and walked the Appalachian Trail. That research resulted in numerous conference presentations, journal publications, book chapters, and a book. I would now extend this research to the mountains along the Continental Divide, walking from Mexico to Canada through the states of New Mexico, Colorado, Wyoming, Idaho, and Montana. As part of my research preparation, I presented three papers on the topic in the spring of 2023. Rather than a research methodology, I incorporated a phenomenological approach consistent with my previous work exploring the Appalachian Trail and the Camino de Santiago. I started the walk at the Mexico/New Mexico border on May 6, 2023. I trekked north until June 1 when I received a very bad upper ankle injury. I had to walk 40 miles over the next two days in order to get out of the wilderness. As a result of the injury, I altered my original plans. I continued the hike from Wyoming, headed south to New Mexico with a support vehicle. After hiking half of Wyoming, Colorado and getting to New Mexico, I drove to the Canada border in Glacier National Park and walked south. I finished the hike in the Wind River Range in Wyoming in September. I took two days in Lander, Wyoming to rest. During that rest I came up with a title for a proposed book: *Walking Where the Waters Cascade over Rock, Flowing toward the Rising and Setting Sun: Encountering the Other on the Continental Divide Trail.* I drove back to Virginia and stopped at Abingdon for my first presentation of research at the Appalachian Long Distance Hikers Association's annual gathering. In November I presented a paper with the proposed book title at the Pilgrimage Symposium, William and Mary. In the spring and summer of 2024, I presented three papers at separate conferences all exploring my research and the proposed theme of a future book.

Works Presented

"Encountering the Other on the Continental Divide Trail: Peeling Away Projections on Pilgrimage to Arrive at Authentic Sharing." Sacred Journeys 11th Global Conference, July 1-4, 2024. Kyoto, Japan.

"An Ecology of Strangers: Encountering the Other on the Continental Divide Trail." Presented at the 19th Annual Conference of the International Association for the Study of Environment, Space, and Place; Conference Theme: Homecoming, Explorations across Land and Sea, Christopher Newport University, Newport News, Virginia, April 26, 2024.

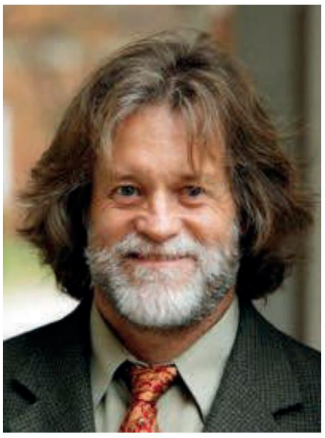
"Encountering the Other on the Continental Divide Trail: Meditation on Respiration, Transpiration and Inspiration" Presented at the 2024 Geo-Aesthetics Conference, March 30, 2024.

"Walking Where the Waters Cascade over Rock, Flowing toward the Rising and Setting Sun: Encountering the Other on the Continental Divide Trail." In a panel titled "A Sense of the Sacred," presented at the 2023 Pilgrimage Symposium at William and Mary, "Restoring Pilgrimage." November 3-4, 2023.

"Layered Environments along the Continental Divide Trail" Presented at the 18th Annual Conference of the International Association for the Study of Environment, Space, and Place; Hochschule Pforzheim, Pforzheim, Germany April 29, 2023. Conference theme: Designing Environments: Layers, Scopes, and Closures.

"The Face of the Earth: The Imposition of Borders." Presented at the 2023 Geo-Aesthetics Conference. March 18, 2023.

"The Face of the Earth Disrupts the Ideologies of Borders." Presented at the 2023 Virginia Humanities Conference, March 3, 2023.



# Studies of Tubulin and Novel Inhibitors: Synthesis, Modeling, and Biological Evaluation

**Dr. Kathryn Cole,[1] Dr. Patricia Mowery,[2] Dr. Erin Pelkey[2]**

**[1]Christopher Newport University, Newport News, VA 23606**

**[2]Hobart and William Smith Colleges, Geneva, NY 14456**

There are ~2 million new cases of cancer and over 600,000 cancer-related deaths each year. The need for new and innovative anticancer drugs continues to be crucial. Tubulin is involved in many cellular functions, including cell shape, mitosis, migration, and movement of organelles. While anti-tubulin drugs have been used to treat cancer for ~70 years, there is renewed energy in developing new generations of tubulin inhibitors that (1) are less toxic than current drugs, (2) combat drug resistance, and/or (3) are effective against more types of cancers.

Using our previously identified anti-tubulin compound, **PY-407-C**, demonstrated strong (sub-micromolar) antiproliferative activity in U937 cancer cells. Screening from the National Cancer Institute showed nanomolar activity against a variety of cell lines and tubulin as the potential target. We confirmed that **PY-407-C** inhibited tubulin polymerization *in vitro*, which inspired the development of a rational drug design program. Specifically, we use computational biochemistry (i.e. molecular modeling) to help inform the design and synthesis of future inhibitors; promising inhibitors are synthesized and tested biologically both *in vitro* and *in vivo*. Each discipline helps advance the overall goal of developing new, potent anti-tubulin drugs.

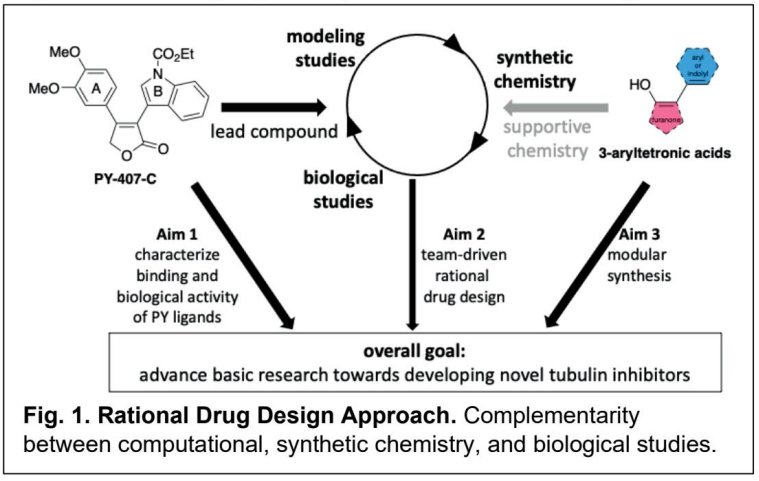



**Fig. 1. Rational Drug Design Approach.** Complementarity between computational, synthetic chemistry, and biological studies.

# Chasing Death: An Emotional Problem to be Solved

Dr. Sherman Lee

I have always been disturbed by death. Not just the ideas of my own death and the death of those I care about, but even those I do not even know. Not just human death, but the death of plants, animals, and fictional characters too. Every day, I am bombarded by news reports of violence, natural disasters, accidents, and celebrity deaths, while listening to the radio or casually scrolling through social media pages. Even the lights and sounds of the passing ambulances that flood my senses as I drive to work make it quite clear that death is all around, powerful, and inescapable.

The most intense and disturbing emotions that I have ever experienced, anxiety and grief, have as their source, death. Because I have found those feelings to be too intense and overwhelming, at times, I tried my best to avoid reading news reports and watching movies that depicted people or animals, dead, in the process of dying, or even grieving. These topics were just too sad, too scary, and too real for me to entertain and tolerate, especially when I was younger. And, if I was too late, and death-related ideas and images made their way into my head, I would tell my mind to stop, before the emotions took me in their grips. As therapists know and often tell their clients, this form of coping only provides temporary relief.

Interestingly, sometime in the beginning of my academic career, I stopped running from death. I grew tired of being reactive to death and its control over my emotional life. So, I decided, with a proactive type of attitude, to confront death. But I did so, on my own terms and on my own turf, as an academic and research scientist. I knew from past experiences that I can overcome most problems with knowledge. And since this was a "big" problem, I set my goal of becoming an "authority" on death, mainly developing an expertise on the psychology of anxiety and grief.

Over the subsequent years, following my initial decision to confront death, I studied thousands of people and their struggles with anxiety and grief. This was a fruitful time, academically speaking, where my papers on death anxiety, religious coping, Islamophobia, pet loss, and pathological grief, were gaining scholarly, and sometimes even, newsworthy attention. Recognition of this work grew to a global level during the COVID-19 pandemic, where death took center stage. I was fortunate to be the first research scientist to define and measure "coronaphobia," a debilitating expression of fear and anxiety over the coronavirus, as well as,

"pandemic grief," a dysfunctional grief reaction caused by losing a loved one to COVID-19. These lines of research continue, mostly in other countries, while new ones, such as anxiety over mass shootings and hospice-related grief, are just beginning. I also share what I have learned with many of my students, who surprisingly take the psychology of death, dying, and bereavement, course I teach every semester. As I take stock and reflect, I believe that I reached my goal of becoming some kind of authority, and even an instructor, on the topic of death.

But expertise, for me, was just a means to an end. I wanted to be free, emotionally, from my aversions to death. And I believe the plan worked. Researching the psychodynamics of anxiety and grief gave me a deep understanding, almost a 3D map of sorts, of the "how" and "why" those disturbing feelings arise and negatively influence our day-to-day life. But it was and continues to be, more than just scholarly knowledge, that seems to help. I believe that the more I recognize my research participants' experiences, as if they were my own, the more I am able to accept myself and these emotional dilemmas we find ourselves in. Although self-compassion is an important side-effect that empathic awareness can bestow upon a feeler, the real gift was that it also reduces my aversions to death. In fact, this kind of empathy gives me the courage and desire to engage with the topic of death, so I can help myself and others cope with their feelings about the end of life. So, now, with a 3D map in hand, a glowing halo of authority, and eager students by my side, we chase death.

## Why do lizards bask in the sun? Turns out, it's not just to warm up!

Dr. Matthew Lattanzio

In nature, many lizards spend the day moving between sun and shade, behaviors we always thought were driven just by temperature. However, sunlight provides more than just warmth, it also provides exposure to ultraviolet (UV) light. As humans, we often relate UV exposure to sunburn risk, but UV exposure is also important for production of vitamin D. For day-active lizards, vitamin D production is also crucial for proper organ function, bone development, and even egg production. At the same time, too much UV light can also have negative health impacts. For these important reasons, lizards *should* regulate their UV exposure too! So… is this the case?

Here we conduct the first direct study of UV regulation in a common lizard species, the fence lizard. We captured fence lizards from the wild, measured their body temperature and UV exposure, and then brought them into our lab. At the lab, we then used a homemade Arduino electronic system to record UV and temperature exposures of lizards in an experimental arena over three treatments (temperature only, UV only, and a treatment combining UV and temperature). Each treatment consisted of a gradient of condition levels, from low to high, allowing us to see what specific conditions each individual lizard prefers, an important physiological consideration.

Overall, lizards did regulate their UV exposure, and preferred higher values than those suggested by captive care guidelines. Thus, fence lizards may experience a boost in health in captivity if given access to higher UV. In contrast, fence lizards preferred similar temperatures to those reported in prior studies. However, those preferences may be overridden by UV demands: in our combination treatment, lizards kept their preferred UV at the cost of exposing themselves to higher temperatures! Normally, we consider exposure to higher temperatures risky, and for good reason: high temperatures can be lethal. Our study however reveals at least one potential benefit of such exposure, access to preferred UV levels, that may partly offset this risk. So, next time you see a lizard lounging in the sun... it may not be trying to warm up, it may be basking for UV!

Link to the published study: https://besjournals.onlinelibrary.wiley.com/doi/full/10.1111/1365-2435.14114

Photograph by Matthew S. Lattanzio (corresponding author) of adult female eastern fence lizard (*Sceloporus undulatus*), observed basking in the sun during a mark-recapture study in 2018.

## A Passion for the Brain

-Darlene A. Mitrano, Ph.D.

When I was in the sixth grade in Queens, New York, one of my favorite activities was receiving a copy of the *N.Y. Times* every day, especially Tuesdays, as that was when the Science section appeared. My teacher, Mrs. Russo, showed us how to read the paper and the proper way to fold it so that everyone's copy would fit on their desks. Each day, we selected one article and shared a summary of it with the rest of the class. My first taste of learning about the brain came from this experience. I would devour the articles in the Science section as best as I could, and if there was an article on the brain, I remember loving it. From there I knew I would somehow end up in a science related career, centered around the brain.

And today, I do just that! After I obtained a Bachelor of Science degree in Psychology from Washington & Lee University, I then ventured to Emory University where I obtained my doctoral degree in Molecular & Systems Pharmacology. More specifically, I combined my love for the brain, and another area of science that always grabbed my attention- drug addiction. Therefore, my dissertation focused on Neuropharmacology and Neuroanatomy—looking at circuitry and receptors in the brain following exposure to drugs, such as cocaine.

Since beginning at CNU in 2012, my research program has continued to examine the neuroanatomical correlates of normal behaviors, but also of the disordered brain. Using different forms of behavioral assays and microscopy techniques, my team uses tools to look at receptors, transporters, and other proteins in the brain of rodent models to explore disorders such as addiction, reward, insomnia, states of wakefulness, and lastly Alzheimer's disease. I, along with collaborators at University of Massachusetts Chan Medical School and Emory University, just obtained our second National Institutes of Health Grant together, this time from the National Institute on Alcohol Abuse and Alcoholism. We aim to study a pathway in the brain that may be overactive in someone recovering from alcohol use disorder, causing insomnia, and potentially relapse. We hope our work can provide further guidance on how to prevent relapse in those with alcohol use disorder to aid in their sobriety efforts.

## Book project. *Problems in Leadership Studies* by Nathan W. Harter

The field of Leadership Studies is notoriously interdisciplinary, in part because it emerged in so many different places such as the military, business management, and political science. To this day, we continue to consult different kinds of sources, which are often based on different authors, vocabularies, and standards. One of the struggles that we have is a diversity of methods, because there is no single, uniform method by which scholars conduct their research. We get historical analyses, quantitative and qualitative methods, and philosophical works about theory. I have known leadership researchers with backgrounds in systems thinking, design thinking, manufacturing, ethics, anthropology, and even (in my case) the law. And the humanities have always been heavily represented as well.

You would think that with so many methods, the problem lies with getting folks to talk to one another in meaningful ways, and that is undoubtedly a considerable challenge. We must turn from being multi-disciplinary to being *inter*-disciplinary. Lately, though, I've started to suspect that in the resulting confusion, we have left certain questions unanswered. There are, in my opinion, several fallow fields that nobody seems to have tended, maybe ever. Consequently, I began a series of investigations into some of these gaps, in order to educate myself and possibly assist students and others in my field of study. I then assembled a collection of these separable investigations into a single book length manuscript. Most of that work is now done. I have one or perhaps two more chapters to write, yet I have already submitted a proposal to Routledge. Presently, I am awaiting their verdict. In the meantime, I chop away at those last couple of chapters, hoping that they say yes.

The guiding framework for this project comes from Richard McKeon who taught for many years at the University of Chicago and whose lectures are only now coming into print. McKeon asserted that there are four basic ways (or methods) that scholars conduct research. The rest of the literature in the social sciences (and not only in Leadership Studies) is usually some combination of these four methods or variations on a theme. The four methods are as follows. Some writers construct **proofs**, building from simple and direct axioms by logical inference, in the manner of Euclid and Descartes. Some writers solve **problems**, beginning with a real world

predicament and proposing solutions that actually work, in the manner of engineering and medicine. Some writers engage in **debates**, arguing for one point of view and against some other point of view – winner take all. Finally, some writers look at multiple possibilities and ask how they can be integrated into a **larger framework**, such as systems thinking, which is precisely what my book is trying to do.

As Leadership Studies grows outward in new directions and grows inward, becoming more thoroughly integrated as a distinct field of study, there will have been a number of gaps or omissions, blank spaces that require attention. I am calling these blank spaces the "fallow fields" of leadership studies. In an effort to fill some of those gaps, this book attempts to ask a few neglected questions, as well as raise some uncomfortable possibilities. By importing lessons from history, biology, systems thinking, military strategy, and philosophy, the reader will see a striking composite emerge.

As Walter Watson put it in 1985, the sheer diversity of opinions about leadership might in fact require a pluralistic mindset, which is to be distinguished from relativism or a post-modern rejection of anything to be characterized as truth. Pluralism is a framework for acknowledging and managing a diversity of opinions while retaining an abiding faith in the merits of rigorous investigation. So much of what appears in these pages will develop this theme.

In order to prepare the reader for the emergence of pluralism, the book sets out to explain what the term means and why it promises to assist those of us who conduct research into leadership. Thereafter, pluralism becomes a thread woven through subsequent chapters – chapters about time and change and decision-making. Along the way, the reader will become introduced to a number of scholars whose work is not often cited in the literature on leadership – scholars such as the aforementioned Richard McKeon, Pierre Hadot, Eric Voegelin, Michel Serres, John Boyd, and Giambattista Vico.

The concluding piece, composed in the form of a sonata, adopts a unique tone of disclosure, where I express what it has meant to me to experience this pluralism directly. In these passages, I proceed without the usual armature of the academic, forswearing citations in order to conduct a phenomenological experiment about the frustration of confronting the following three multiplicities which have no discernible order: of reality, of human knowledge, and of the

individual human mind. Each is a bewildering chaos. It is my contention that this intersection of three multiplicities is the environment both scholars and leaders must navigate in order to make any headway. In response to this inescapable reality, pluralism offers a promising way to facilitate understanding. That is my contention.

Representative sources

Goethals, G.R., & Sorenson, G.J. (eds.). (2007). *The quest for a general theory of leadership*. Edward Elgar Publishing.

Harvey, M. & R. Riggio (eds.). (2012). *Leadership studies: The dialogue of disciplines*. Edward Elgar.

Levine, D. (2015). *Social theory as a vocation: Genres of theory work in sociology*. Transaction Publishers.

McKeon, R. (2016). *On knowing: The social sciences*. University of Chicago Press.

Watson, W. (1993). *The architectonics of meaning: Foundations of the new pluralism*. University of Chicago Press.

## The FAB and Me

**Dr. Jeffrey Gibbons**

A long, long time ago (1995) in a geographical and mental state far, far away, I was a graduate student working late at night trying to understand human autobiographical memory, and my friend and fellow graduate student at Kansas State University (KSU), Rich Walker, excitedly pushed open the door of the lab I was in and shouted, "I just found that unpleasant emotions fade faster than pleasant emotions in our diary studies!" I responded, "Everyone knows that Rich." Although past research did show that unpleasant emotions faded faster than pleasant emotions in the 1930s (Cason, 1932) and the 1970s (Holmes, 1970), Rich later showed that the fading affect bias (FAB), the faster fading of unpleasant than pleasant emotional affect, was present for people who thought, compared to pleasant emotions, that unpleasant emotions faded 1) faster, 2) the same amount, and 3) slower. So, everyone did not know about the FAB and I certainly did not know that this old finding would dominate the rest of my research career, by allowing me to use my darkest experiences and insights as driving forces and explanatory mechanisms to examine topics that deeply interested me.

In 2000, Rich, Rod (another friend and fellow grad student), and I were preparing to drive from Estes Park after a SARMAC conference at the University of Colorado to Manhattan Kansas (en route to Rich's wedding) at night and Rich told our mentor and several of his well-known (in the field of memory) friends that we were going to write a grant in our 8-hour drive. We did not write that grant, but we devised an experiment in which we manipulated social rehearsals, and we repeated our previous results when we found that FAB increased with social sharing. The methodology was innovative for this type of research and social rehearsals ended up being one of the explanations for many FAB findings. In 2004, we published this article after we published an article in 2003, in which the FAB decreased when depression increased. This finding was important because it suggested that the FAB was a coping mechanism that led to healthy outcomes. In 2009, a graduate student from KSU asked when the FAB started and no one knew but I did know that we had already collected the data to answer the question. We discovered that the FAB manifested within 12 to 24 hours of an experience. This article has been read over 8000 times on ResearchGate and I am very happy that so many others thought that detecting the

inception of the FAB was worth their interest and time, especially as many "experts" predicted that it would appear only after months.

Although the FAB seems to be a positive coping mechanism, I asked Rich at a conference around 2008 if he thought the FAB could "go wrong" and he said, "No". Although I respected his opinion, my personal experiences dealing with an addictive personality suggested that remembering the sting of my mistakes, especially big ones, helped me stop engaging in harmful behaviors that led to those mistakes. Therefore, the FAB could be harmful to addictive behaviors, such as alcohol and drug consumption, gambling, abuse, and work, and the unpleasant experiences and memories they lead to because it removes the bad feelings that may help people stop engaging in those behaviors. We found that FAB was high for high consumers of alcohol when they rated alcohol events and FAB was high for low consumers of alcohol when they rated-non alcohol events (Gibbons et al., 2013). We found similar results for marijuana consumption and video game play, and we expect the same findings in the context of gambling, sex, abuse, and work. These important scientific findings supported my contention that the FAB could "go wrong" and they taught me that an honest inward look at my experiences and struggles could provide useful perspectives for understanding the way other people behave, think, and feel.

In addition to examining where the FAB goes wrong, my lab has had some fun examining the FAB in the context of religion, relationships, US presidential elections, problem-solving, COVID-19, and false memories. For religion, we found that the FAB was not present for religious events (the practice of religion), but it was present for spiritual events (connection to a higher entity), and it was especially large for events considered religious and spiritual (Gibbons et al., 2015). For relationships, we found that the FAB increased when partner esteem increased and this effect was present across relationship and non-relationship events, but it was very strong for relationship events (Gibbons et al., 2022). Although these results do not support the "Happy Wife, Happy Life" Mantra, they do suggest that having high esteem means "Living the Dream". For presidential elections, FAB was larger for non-election events than election events. However, winning political parties showed a larger FAB for political and non-political events than losing political parties, but the difference in FAB for political events was much larger than

the FAB for non-political events. The results showed that winners in the political arena emotionally shine, whereas losers in this area merely opine.

For problem-solving, we found that people showed a larger FAB for problem-solving events than non-problem-solving events and FAB was high when positive problem-solving attitudes and healthy measures, such as current positive feelings, were both high. These results suggest that problem-solving helps people emotionally regulate. Surprisingly, the pandemic was so pervasive that it flipped the emotional world upside down (Gibbons et al., 2023). Specifically, FAB was high when anxiety related to COVID-19 was high and levels of unhealthy measures, such as depression and stress, were high. As an explanation, we suggested that experiencing high levels of one unhealthy emotion, such as high COVID-19 anxiety, could have helped individuals become so used to such feelings that they learned to expect and cope well with additional unhealthy emotions, such as high depression. Alternatively, one unhealthy emotion, such as high COVID-19 anxiety, could have distracted individuals and made them misinterpret other unhealthy emotions, such as high depression, leading to emotional coping in the form of FAB.

Prior to the pandemic, we found that FAB was low when social media use was high (Gibbons et al., 2017). More recently, we replicated and extended this finding using diary studies and we showed that FAB was low when false recognition of foil event titles mixed in with real diary event titles during a recognition test was high (Gibbons et al., 2022). This study was my most important one because it is the only FAB study to examine and find a relation of FAB to objective memory measures rather than subjective perceptions of memory and emotions, and it continued to show that the FAB was a healthy coping mechanism that was negatively related to unhealthy variables, like false identification.

I study the relation of the FAB in these wide-ranging contexts because they are topical, and they relate strongly to my interests. In terms of my FAB, I emotionally regulate and feel the best when I am working, competing, drinking, gambling, and socially sharing (listening and telling) experiences with others. Therefore, the FAB is the lens that helps me determine whether my perceptions are singular or shared in a world where many of us often find ourselves outside looking in. And it all started with my friend rediscovering the emotional wheel now known as the FAB and my untethered interest in rule-breaking, which is currently being studied in my lab.

## A Magical Year: My First Sabbatical

By Eric J. Silverman

I developed an idea for a follow up book after I published my first monograph, early during my time at CNU. With the help of the Office of Sponsored Programs, I applied to a research fellowship based at Biola University for the 2015-2016 academic year so that I could take a full year sabbatical to work on my second monograph: *The Supremacy of Love*.

My sabbatical in Los Angeles supercharged my academic research, helped me build my network of academic contacts, all while creating an exciting adventure for my whole family. At the end of June 2015, our family of five embarked on the cross-country road trip to start our year-long adventure. We took our time to see the country and visit friends in places like St. Louis, Colorado Springs, and Las Vegas. We arrived in the Los Angeles suburbs in time to settle into our temporary home before my research program began.

The interdisciplinary research center brought eight research fellows together, on the year's research theme of love. We regularly presented drafts of our research to one another and had weekly casual lunches to discuss our research. Periodically, the research center brought in well-known professors to share their latest research on the topic. As a philosopher, I was especially pleased to meet Harry Frankfurt, Nicholas Wolterstorff, and Stanley Haeurmas.

It was by far the most productive year of my academic career. I successfully wrote the manuscript for my monograph on love, which was eventually published by Rowman and Littlefield in 2019. I also completed two other co-edited books: *Paradise Understood* published by Oxford University Press in 2017 and *The Ultimate Game of Thrones and Philosophy* published by Open Court Press in 2016. I began the sabbatical focused on one book and came home with three manuscripts. I also created relationships with an interdisciplinary research team that I continue to publish with to this day.

While those three books have done a lot for my career, my fondest memories of the year were those with my family. We committed ourselves to seeing as many of the important sites in California as possible. We took our three daughters to see the Sequoia National Park, the tide

pools at Crystal Cove, the San Diego Zoo, alive taping of an episode of Girl Meets World, Disneyland, and lots of other memorable places.

As the year ended, we prepared for another adventure on the trip home. We made stops in San Antonio, New Orleans, Atlanta, and Myrtle Beach as we took the southern route home. Not every year, or even ever sabbatical can be like that one, but I am thankful for the support of CNU in making my favorite adventure happen.

## The Genetics and Genomics of Alcohol Abuse

James Bogenpohl Ph.D.

Alcohol is consistently one of the leading causes of preventable death in the United States, with around 29.5 million Americans (10.5%) having an alcohol use disorder. Research suggests that about half of a person's risk of developing an alcohol use disorder is attributable to their genetics. While it's clear that alcohol abuse involves a strong genetic component, further research suggests that hundreds or even thousands of genes are involved in this phenotype. My research laboratory is focused on determining which genes are the most important or influential ones for determining alcohol-related traits. Once they have been identified and characterized, these genes could represent biomarkers for the risk of developing alcohol use disorders in humans, or even as targets for future pharmacotherapies to counteract alcohol abuse.

My laboratory at CNU is investigating this matter through biological research. In a previously published genomic study of chronic-alcohol-treated mice and nonhuman primates, we generated a ranked list of all genes, relative to their correlation to alcohol phenotypes. Currently, we are choosing target genes from this list, acquiring transgenic mice that lack one of these important genes, and testing them to see if any alcohol behaviors are altered. We use behavioral tests to assess any alterations in alcohol's ability to relieve anxiety in the mice, the mouse's sensitivity to alcohol, as well as the mouse's drive to voluntarily drink alcohol. Each of these three phenotypes are known to be important risk factors for humans to develop alcohol use disorder. We also sometimes characterize the expression pattern of these genes in the brain, observing which brain areas and which types of brain cells express each gene, to learn about their functions and the mechanisms by which they might influence alcohol behaviors.

## The Sound of Chemotaxis

Maxwell Tfirn, Music Department

My research, apart from composing music and sound engineering, has been a collaborative project with the University of Virginia Chemical Engineering department specifically the Roseanne Ford lab. We are studying bacterial chemotaxis or how a bacterium moves in relation to chemical stimuli. This research specifically is coming up with a tool that can be used in real-time to see if chemotactic experiments are yielding any results. The biggest issue with studying chemotaxis is we cannot discern anything with our eyes as the experiment is running so if nothing happens we don't know that until we analyze the data. Using data sonification we can turn the microscope slides into audio and hear patterns in the motion that our eyes do not pick up.

To hear the patterns in the motion, please scan the QR code below.

## Quinlan Group – Overview

The Quinlan group strives to embody the mission of Christopher Newport University by providing excellent educational opportunities with cutting-edge science. We have a strong sense of service to our community & work with local Newport News & other Virginia industries to develop leadership & service in our team through cogent scholarship. We work to help each other grow as individuals & scientists, training the next-generation while acting as stewards of our environment. We approach these lofty goals through three main research efforts; the beer project, the paint project, & the water project.

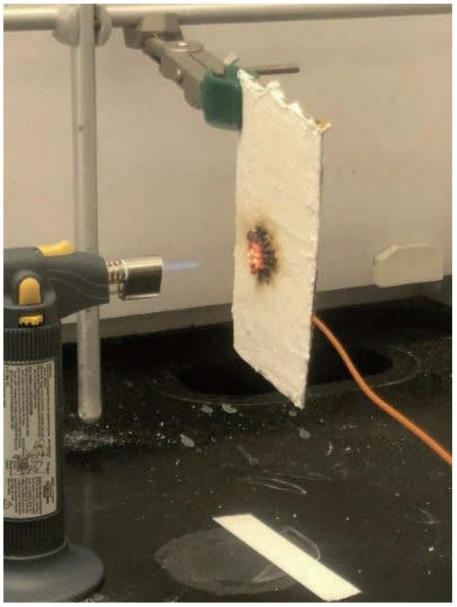
### Quinlan – Brewing up Laboratory Skills

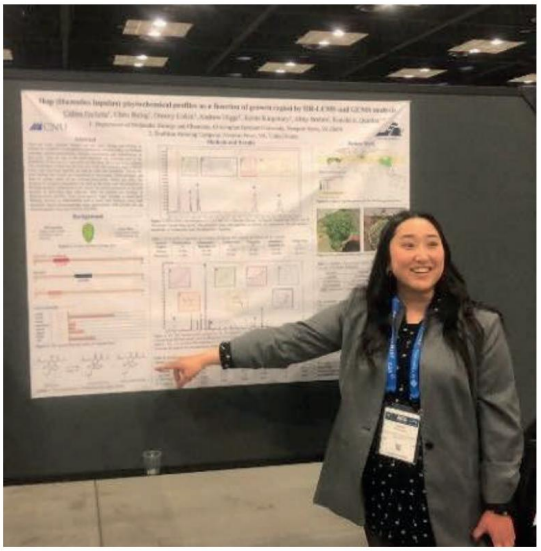
The Quinlan group is investigating the effects that terroir have on the flavor & health benefits of beer. Specifically, we are using high resolution, liquid chromatography mass spectrometry (HR-LCMS) & headspace gas chromatography mass spectrometry (HS-GCMS) to determine the phytochemical response of hops & barley as a function of growth environments. The term phytochemical is used to collectively describe chemical compounds found in plants that may or may not have biological activity in humans. While it is known that the bioactivity of many nutrients can be altered during processing of agricultural products, the production and protection of these compounds as a result of growing conditions is an area of intense research. The Quinlan group has a unique approach, using HR-LCMS to study non-volatile compounds, or chemicals that are typically considered to affect the taste of beer and HS-GCMS to study volatile compounds, or chemicals considered to affect the aroma of beer. Together, taste & aroma, the flavor of the finished products as a result of starting material can be determined. The Quinlan group is actively working with other disciplines to include local breweries, Organismal Biology & Neuroscience in an attempt to analytically define parameters, not only for the industry, but also for the local consumer.

### Quinlan – Fire, Away!

The Quinlan group has been studying the effects of raw material composition on the intumescent properties and shelf-life of fire protection coatings. Our students study raw material properties using Fourier-transform infrared spectroscopy (FTIR), differential scanning calorimetry (DSC),

and thermogravimetrical analysis (TGA). The students also work closely with local and international businesses in a fast-past industrial approach to make sample paints, simulate burn environments and study the buried interface using attenuated total reflectance (ATR) FTIR. The development of fundamental properties has a direct result on product performance and the students are exposed to such concerns and successes from an industrial perspective.





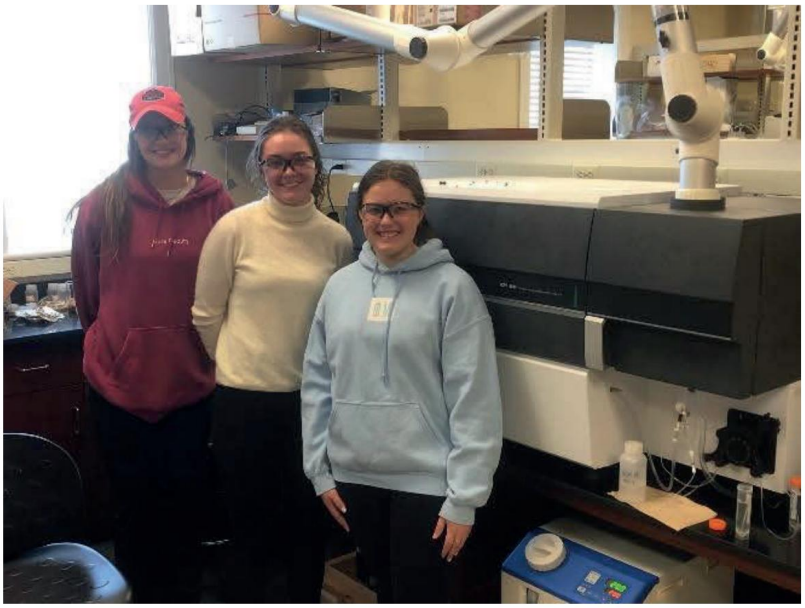
Quinlan – From the Mountains to the Bay

The Quinlan group is developing the next generation of scientist and enhancing STEM engagement in underserved, rural communities by collaborating with Snow Creek Elementary's 5th grade students on their "From the Mountains to the Bay" project. The students are focused on their standards of learning (SOLs), specifically for the state of Virginia, SOL 5.6,which is focused on natural resources and human interactions and SOL 5.7, which focuses on matter's properties and interactions. As part of the program, students hatch trout in their classroom and study the properties of water like pH and hardness to determine the best place to release their trout at the end of the term. Quinlan group students utilize high resolution, liquid chromatography mass spectrometry (HR-LCMS) to analyze water samples sent by the 5th graders for per- and polyfluoroalkyl substances (PFAS) and personal care products and pharmaceuticals (PCPPs), which are known to cause problems for humans, fish, and aquatic environments.

Additionally, the students use inductively coupled plasma – optical emission spectroscopy (ICP-OES) to determine the metal content of the waters, including trace metal analysis that can elude detection by more common methods. These data are then distributed to the 5th graders in a manner that is consistent with their scientific development. Most of the 5th grade students come from a low socioeconomic background with over 70% receiving free and reduced breakfast and lunch; alongside of receiving food to take home three days a week, including a Friday bag for the weekend. The Quinlan group strives to provides these students with opportunities they may never see again. This platform offers the students with an experience to visit/tour a college campus; enjoy the animals at the Virginia Living Museum and the VA Aquarium as well as, put

their “toes in the sand” at VA Beach. It serves as a gateway to cultivating a life-long love for the outdoors, nurturing environmentally conscious citizens who understand, appreciate, and actively contribute to the well-being of the natural world.

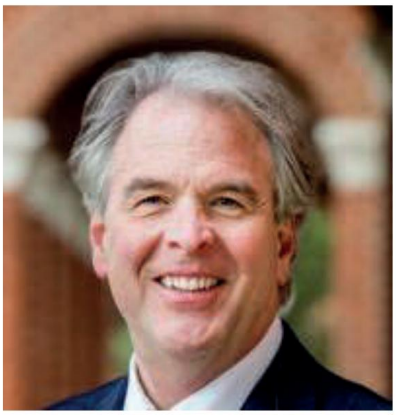
Quinlan Teams



## Journal of Performing Arts Leadership in Higher Education

Mark Reimer

The *Journal of Performing Arts Leadership in Higher Education* (JPALHE) is a national, peer-reviewed journal dedicated to the enrichment of leadership in the performing arts in higher education. Its goals are 1)to promote scholarship applicable to performing arts leadership, 2) to provide juried research in the field of performing arts leadership, and 3) to disseminate information, ideas, and experiences in performing arts leadership. Through funding from Friends of Music and the sale of advertisements, JPALHE is published once a year, both in hardcopy and online, and is mailed to the libraries of all NASM-accredited institutions of higher education in the United States. The journal presents a wide range of topics relevant to visionary leadership in the performing arts in higher education, including curriculum development, equality and diversity, assessment, career preparation, governance, friend raising, technology, enrollment, and recruitment. Owned by the CNU Board of Visitors, the journal was founded in 2010 by Dr. Mark Reimer and Dr. Laurence Kaptain, former dean of music at Shenandoah Conservatory and Louisiana State University and currently at the University of Colorado Denver. Each editorial board member pledges a three-year commitment to serve. The board continues to include dance, music, and theatre administrators from the nation's leading performing arts schools such as Harvard University, Yale University, Indiana University, Eastman School of Music, Oberlin Conservatory, and Arizona State University, to name just a few.



## Out of Office

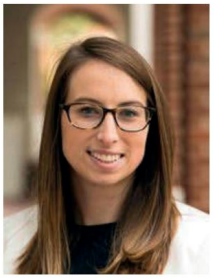
**Dr. Leslie Rollins**

During the peak of the COVID-19 pandemic, I was home with a preschooler while pivoting my classes online, flexibly and empathetically supporting my students, and compiling my dossier for tenure and promotion to Associate Professor. I also transitioned my research on the cognitive and neural bases of memory online and began writing the NSF ADVANCE Catalyst grant to explore gender equity among CNU's STEM faculty. As the weeks and months of the pandemic unfolded, I recognized that, like many educators, I was beginning to experience burnout. I decided to apply for sabbatical as soon as I was eligible, and I was grateful to receive funding for my first sabbatical leave for Spring 2023.

My academic goals for sabbatical were to dedicate time to beginning new research projects, establishing collaborations with colleagues at other institutions, and writing articles for publication. Consistent with those goals, I started collecting data for two new research studies, began collaborating with two colleagues at primarily undergraduate institutions, traveled to New Orleans with Alexis Walters ('23) and Ananya Kanal ('23) to present our research at the annual meeting of the Southeastern Psychological Association, submitted three papers for publication, and received notification that our NSF ADVANCE Catalyst grant was selected for funding! While accomplishing these goals, sabbatical also provided me with the flexibility to pursue other activities that figuratively and literally "fill my cup." I tackled home improvement projects, experimented with new recipes, and enjoyed visiting and writing at 28 local coffee shops. Below are my favorite coffee shops from different locations throughout Hampton Roads:

1. 54 Beans (Carrollton)
2. Gather (Chesapeake)
3. Mea Culpa (Norfolk- Ghent)
4. Mudita Cafe (Norfolk- Ocean View)
5. Three Ships (Virginia Beach, 19th St.)
6. Busy Nothings (Newport News)

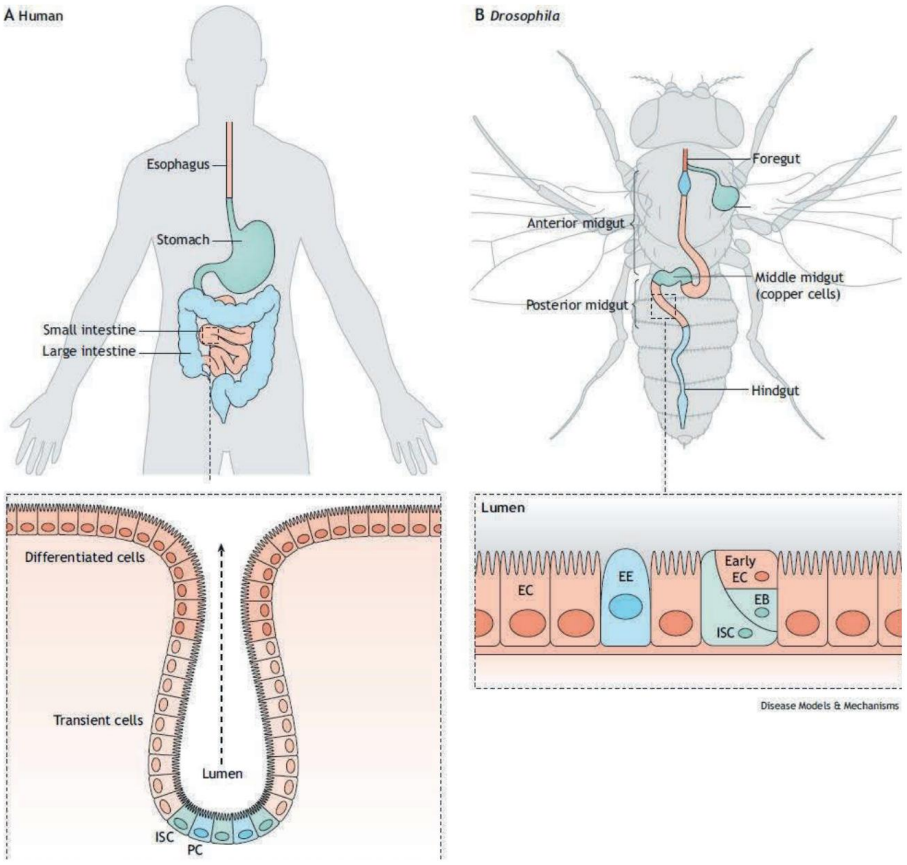
I completed my sabbatical feeling deeply fulfilled by the literature I explored, projects I initiated and completed, and lattes I enjoyed. I returned reinvigorated to the classroom and laboratory and eager about the trajectory of my scholarship for years to come.



# Investigating the Impact of the Gut on Aging and Disease

**Dr. Anna Salazar**

The world population is rapidly aging, with the number of people over 65 more than doubling to 1.57 billion by 2050. This aging population increases the probability of a simultaneous elevation in numerous age-related health issues, including neurodegenerative diseases such as Alzheimer's Disease and Parkinson's Disease. Aging is natural facet of life, but many of the details about what cause specific aspects of aging and whether it may be possible to slow or even halt aging are unknown. Humans and other organisms exhibit age-related changes at the tissue, cellular, and molecular levels throughout their lifespans, but the underlying causes of these changes are just beginning to be understood, even though they have been under investigation for many years. Gaining a deeper comprehension of the molecular mechanisms contributing to aging is extremely important because if we can understand exactly what is causing the cellular changes that we see with age, we may be able to find ways to intervene to slow or even reverse some of these processes. A clearer understanding of the physiological changes accompanying aging may lead to the discovery of novel therapeutics to assist in aging phenotypes and diseases, thereby helping to extend human health into later years. My lab hopes to gain a better understanding of the underlying molecular causes of aging, with the long-term goal to help people to

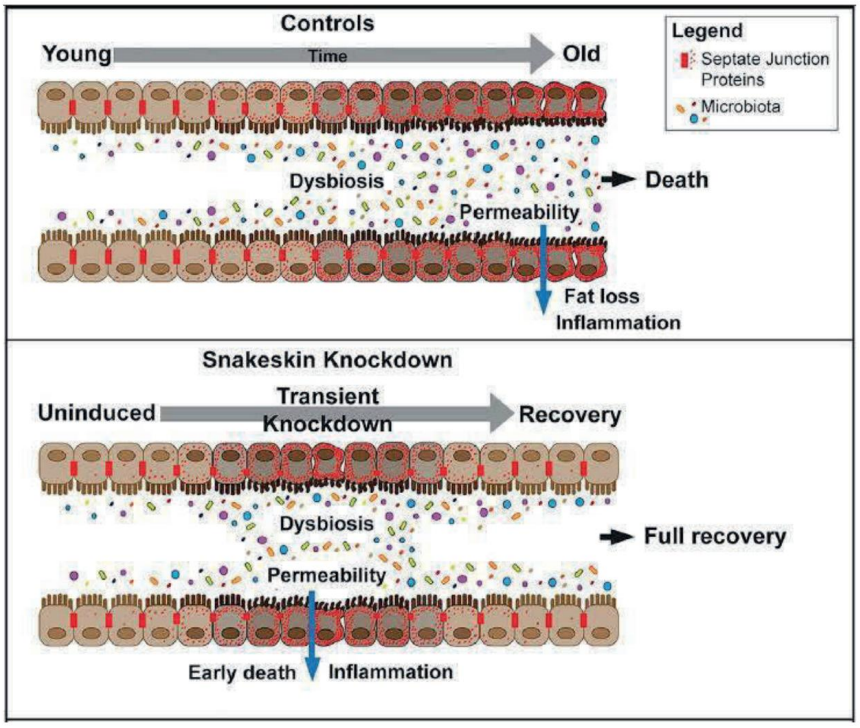



Colleagues at UCLA and myself have recently linked intestinal barrier dysfunction, or changes in the gut that make it "leaky" to many hallmarks of aging. Research originating in the model organism *Drosophila melanogaster*, or the common fruit fly that many have seen hanging around fruit in local grocery stores, have been utilized to understand important aspects of aging. This is because fruit flies and humans share molecular, cellular, and physiological properties, with the fly gut and human intestine sharing many similarities as seen in the image above. In fact, at least 75% of the disease causing genes in humans are conserved in flies, making this simple insect a fantastic model organism for understanding numerous human diseases. Because of this, when recent experiments at UCLA revealed that the fly gut was highly correlated with mortality and disease, with aging flies developing intestinal barrier dysfunction about 7 days prior to death, it became very interesting to further investigate the role of

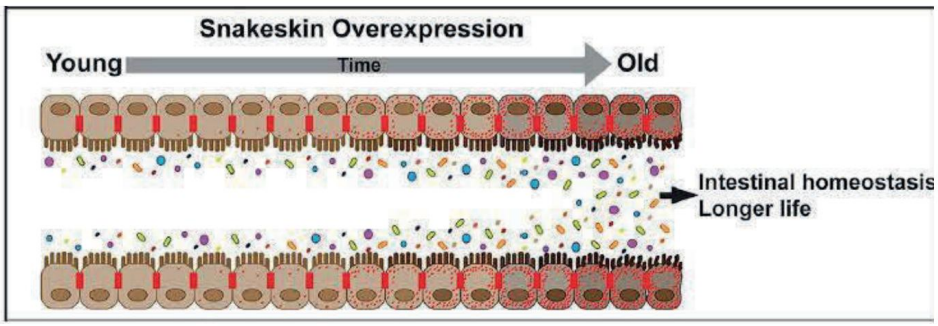
the gut in aging, in the hopes of assisting humans as they age. In fact, multiple studies reveal other organisms do exhibit intestinal barrier dysfunction accompanying aging, with worms, fish, rodents, monkeys, and humans all exhibiting age-onset loss of intestinal barrier function, validating the use of Drosophila for this research.

Our guts are interesting for many reasons. For example, humans are thought to have approximately the same number of bacterial cells as our own cells, which is a remarkable concept to contemplate. The vast majority of these bacteria are found in our guts, although bacteria are also found in other areas of the body, including the skin and even the eyes. Because there are so many bacteria in the gut, we wondered if these bacteria could play a role in the intestinal permeability observed as organisms age, or in other age-related pathologies. Our published results reveal that bacteria do play a significant role in aging in flies, with bacteria growth and changes in types of bacteria accompanying gut barrier dysfunction. In addition, flies grown with no bacteria exhibit an extended lifespan and are healthier longer. In humans, experiments did reveal changes in bacterial amounts and types as humans age, with these changes correlated to an increase in inflammation, frailty, and disease. This is interesting because these changes in bacterial amounts are correlated with elevations in inflammation, which negatively impact numerous aspects of health, and is currently thought to contribute to diseases such as ulcerative colitis, Crohn's Disease, asthma, allergies, type II diabetes, and age-related diseases, including Alzheimer's Disease, heart disease, arthritis, and cancer. This means that a better understanding of the role of bacteria in the gut and gut health in general, may impact our understanding of many important diseases that impact a large portion of the population.

My previous work investigating molecular causes of leaky guts, led to the discovery that tight junction equivalent proteins in the gut, which are proteins that make sure that adjacent epithelial cells in the gut are held tightly together, prevent contents from inside the gut from moving outside the gut, and regulate solute and ion movement between cells, become mislocalized in aging organisms, contributing to changes in barrier integrity. Genetically knocking down one of these junctional proteins, Snakeskin (Ssk), in the guts of young flies leads to many of the phenotypes observed in aging flies with leaky guts such as gut permeability, metabolic dysfunction, which is associated with diseases like diabetes, inflammation, microbiota dysbiosis, or bacterial changes, stem cell



Salazar et al., iScience 2018




dysregulation, which can lead to cancer, and a greatly shortened lifespan. Remarkably, restoring this one protein to the cells in the gut reverses all of these phenotypes and restores the normal lifespan to our flies. Also, overexpressing this one junction protein in the guts of flies leads to the strengthening of the gut barrier, a decrease in gut bacterial changes, and to a significant extension in lifespan. This shows that investigating proteins involved in the gut barrier can lead to possible therapeutics that can extend the health and life in our flies and we hope that this research will lead to a better understanding of these processes in humans that can strengthen human gut integrity and health.

Our research shows that Ssk flies are a fantastic model for discovering the molecular changes accompanying intestinal dysfunction and for attempting to reverse these changes. My lab has been fortunate to receive a National Science Foundation grant to pursue this research and current experiments are exploring how changes in the gut impact the muscles and brains of our flies. We are investigating changes in muscles that contribute to the slowing of movements that accompany aging. We are also investigating changes in protein aggregates in the brain associated with diseases like Alzheimer's and Parkinson's Disease. These are proteins that are not properly broken down and cleared from the brain and are linked to neurodegenerative diseases. We are interested in learning whether genetically producing a leaky gut in young organisms can recapitulate these aging phenotypes in the muscles and brains of our flies and, even more interesting, whether we can reverse these changes by restoring the integrity of the gut. In addition, we are interested in understanding the role of the gut bacteria in these changes in the brains and muscles and are also researching the impact of inflammation in these aging phenotypes. We are doing this by treating our flies with antibiotics to kill the bacteria and then observing whether this impacts phenotypes in the brains and muscles that we observe while perturbing the gut. The results from this research will be extremely interesting and relevant to human health because if we can understand how muscle and brain protein aggregates are created and reversed in our model system, we may be able to target these mechanisms in humans to help those suffering from debilitating diseases associated with aging.

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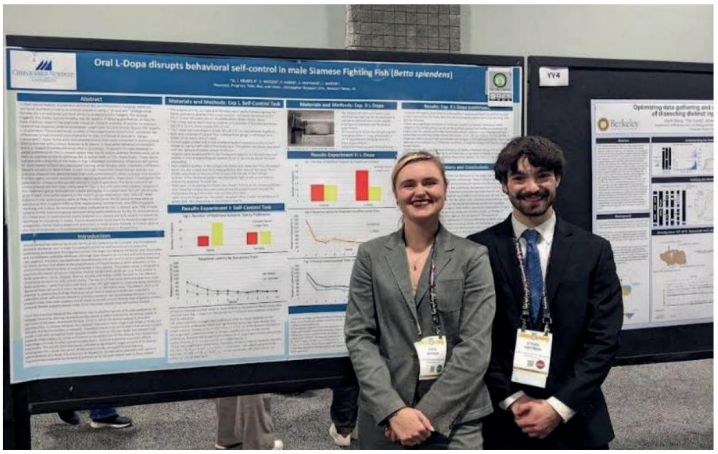
## From the "Men in Blue"

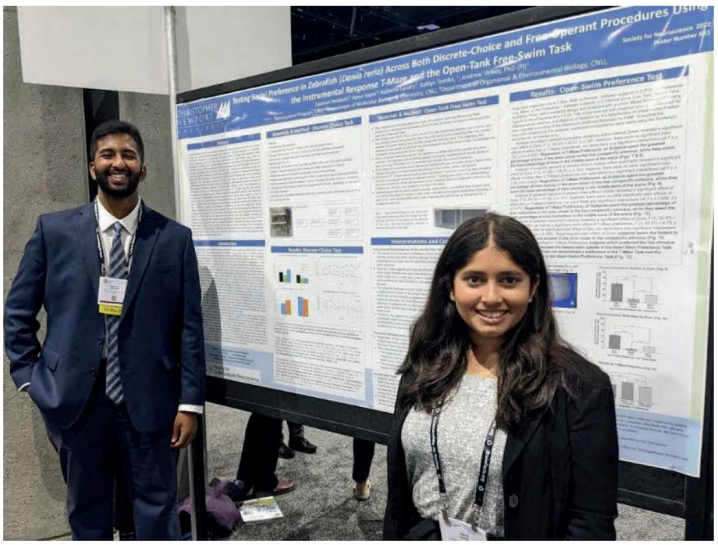
Officer Todd Coxe successfully applied to The Virginia Department of Criminal Justice Services for $75,000 through a special grant from funding for the American Rescue Plan Act. These monies would be used to purchase items that are not otherwise budgeted but are needed. The awarded funds were used to purchase body armor, which weighs less than typical armor, is to be worn on top of uniforms to make them visible. This makes the armor not only more comfortable but also increases safety.

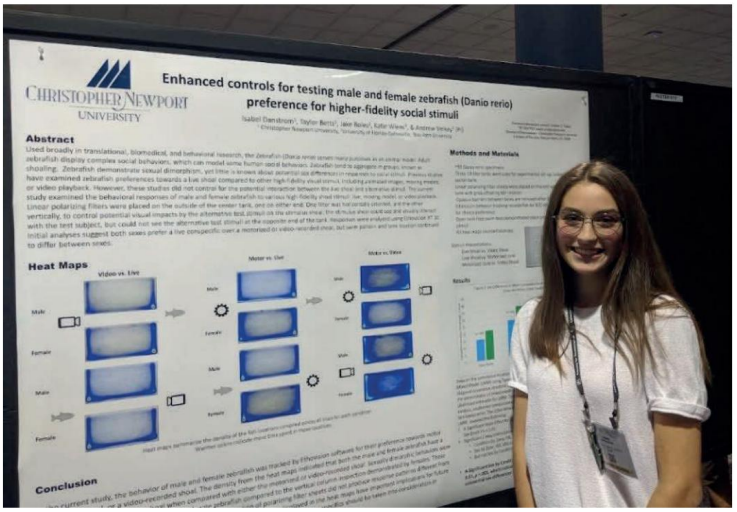
The Office of Sponsored Programs is delighted that Officer Coxe took the initiative to follow our process and successfully gain funding to enhance his department.

## Something's Fishy in Forbes

Dr. Andrew Velkey's "FishLab" studies various aspects of social preference and reward choice using zebrafish and Siamese fighting fish. Utilizing a team-science approach to the undergraduate research environment, the FishLab is organized into three research groups, each addressing their own project-specific research question. The first team examines social preference in zebrafish responding to visual cues associated with anti-predation fear responses using advanced computerized motion-capture and analysis technology. The second group seeks to develop a zebrafish model of choice paralysis, the phenomenon by which very similar options lead to an unexpected delay in choice responding. The lab also recently developed an animal model of impulsivity and self-control which the third team uses to study the behavioral pharmacology of compounds for treating anxiety and depression (e.g. Prozac) as well as Parkinson's disease (e.g. Levadopa). As one of the largest undergraduate research groups at CNU, the FishLab team brings in diverse perspectives by including students across a wide variety of majors (not just STEM). With this wide variety of backgrounds and interests, we foster an interdisciplinary research environment that emphasizes teamwork both inside and outside the lab. All "FishLabbers" have multiple opportunities to immerse themselves in undergraduate research by collecting data, making and presenting posters at scientific conferences, co-authoring manuscripts for publication in scientific journals, and taking on a variety of leadership roles within the lab. In doing so, FishLab members gain the experience and skills necessary for post-graduation success, ensuring they are well prepared to enter the workforce or pursue advanced study in graduate school or professional education.






CHRISTOPHER NEWPORT UNIVERSITY
Enhanced controls for testing male and female zebrafish (Danio rerio) preference for higher-fidelity social stimuli
Abstract
Heat Maps
Conclusion

## Dr. Donaldson's Research Portfolio

Examples include:

With students

- Research into regional governmental efficiency or lack thereof. This research has been conducted for more than 6 years with students from business, economics, political science, communications, and leadership.
- Research into the emerging hydrogen economy in Hampton Roads. An environmental science study has been working with Dr. Donaldson on applications and opportunities for the new hydrogen facility at Tech Center in Newport News
- Research with a biochemistry student into the commercialization potential for novel silver nanoparticles.
- Research with an ROTC and leadership student into the environmental compliance and status of the US and allied military regimes.
- Guiding a math major in the development and commercialization of a revolutionary math homework platform.

With regional partners

- Dr. Donaldson is supporting an effort at Jefferson Labs to explore the commercialization pathways for super-conducting resonant frequency (SRF) cavities.
- In conjunction with Dr. Michael Layne at Eastern Virginia Medical School (EVMS), and Amy Drewry, a documentary film-maker, Dr. Donaldson is in the process of converting his last book, *Estimated Time of Departure*, into a documentary to be used to train medical residents at EVMS in end-of-life planning and discussions.
- In conjunction with Kennedy Firm, exploring converting *Estimated Time of Departure* into a feature film.

- In conjunction with the Peninsula Chamber of Commerce, Dr. Donaldson developed and is delivering the series Start, Grow, Thrive, a 9-segment series of business advice for regional businesses and non-profits.

In addition to the above, Dr. Donaldson continues to research, explore and write extensively in a broad array of disciplines and areas including Leadership, Family Business, Digital Transformation, Community Based Learning, Systems Thinking, Academia, Governance, and others. Since 2021, Dr. Donaldson has published ten peer-reviewed journal articles, three book chapters, three newspaper articles, delivered a TED Talk, and been featured on 5 podcasts.

## Chemical Reactions that Originate on Atmospheric Aerosol Particles

Dr. Joshua Patterson

Chemical reactions that originate on atmospheric aerosol particles can have major impacts on the composition of the atmosphere, influencing air quality and human health. The accurate prediction of these reactions is difficult due to the complex environment in which they occur, the interfacial region.

Ions, a major component of aerosols, are known to distribute unevenly within the interfacial region

and can alter reaction outcomes. The accurate prediction of atmospheric chemistry requires precise knowledge of the arrangement of ions at interfaces and the properties that drive these arrangements. My National Science Foundation-supported research is directed towards investigating how molecular interactions and ionic charge influence the preferences of ions for the interface. Using reverse micelles as models for sea-spray aerosols, my students and I are able to examine the properties of interfacial ions with infrared spectroscopy. By examining how the infrared signatures of ions respond to changes in local environment we are able to produce quantitative estimates of the reactive availabilities of ions, which can be used to enhance the accuracy of atmospheric models and provide critical data to inform and shape policies on emission standards.

# Can we help people reduce stress by teaching better communication practices?

Alice E. Veksler, PhD, BCPA, MCHES

Members of organizations often experience various forms of stress. In the workplace, organizational stress can lead to poor job outcomes, burnout, absenteeism and ill health. The most common way that people address day-to-day organizational stress is through communication with others. The research on the benefits of communicating social support is robust. Social support can help people deal with intrusive thoughts, vent, receive advice, and/or resolve actual issues. However, our research has shown that in many cases, people feel that they cannot or should not discuss their organizational stress with others. In other words, they feel restricted in their ability to communicate. We first identified this phenomenon in a 2011 conference presentation and named it Communicatively Restricted Organizational Stress (CROS). In 2015 we published our final conceptualization of this concept:

We conceptualize CROS as a perceived inability to communicate about aparticular stressor. CROS is a meta-stressor insofar as it starts with the appraisal of an initial stressor (e.g., conflict with coworkers, lack of job security, unsafe work conditions, etc.) and functions to exacerbate the experience of stress caused by that stressor. CROS functions in multiple ways. First, the experience of CROS decreases an individual's ability to directly address and/or resolve the stressor. Second, CROS can be experienced as a lack of social support if an individual feels that he or she has few (if any) people to turn to for help. Next, CROS can be experienced as a decrease in coping ability if one's perception of available support is reduced. Finally, CROS can frustrate one's ability to convert perceived support into received support. (Boren & Veksler, 2015, p. 34).

There are many reasons that someone may feel CROS. There may be real constraints such as privacy laws (e.g., HIPAA or FERPA) that prevent talking about what happens at work, there may be implied rules (e.g., keeping sorority business private), or people may feel internal pressures to stay silent (e.g., feeling that raising the issue may cause more harm than good).

We established that CROS exists across various populations (Boren & Veksler, 2015), designed a measure to evaluate the prevalence and distress associated with CROS (Veksler & Boren, 2017), and evaluated how CROS interacts with other known organizational and individual health outcomes. We also established the existence of CROS in a national sample of working adults showing that this phenomenon is both widespread and problematic. In subsequent studies, we evaluated the effects of CROS in various specific subpopulations such as working nurses and university faculty. We then established negative health outcomes associated with CROS and articulated how CROS fits in with existing organizational stress and public health theory (Veksler & Boren, 2022; Boren & Veksler, 2023).

Our current program of research focuses on CROS in the healthcare delivery setting given the demands of that field. In particular, we are interested to see whether communication skill training can reduce the negative effects of CROS, decrease burnout, reduce turnover, and improve patient outcomes for nurses. Given that CROS is more likely in high stress settings, and that nursing has been established as a high-stress occupation, we believe that addressing CROS in this setting can lead to very large effects. Our current grant proposal is focused on delivering a resilience based, trauma-informed training to nursing home nurses aimed at reducing CROS. We are working directly with a government contracted continuous quality improvement company responsible for over 2,000 nursing homes in the US and are designing a randomized controlled trial using best practices in program evaluation to test our training intervention. Outcomes we are examining include Effort/Reward Imbalance (ERI), perceived organizational support, nursing stress, insomnia, perceived diminished productivity, general health, and organizational turnover.

Our overarching research question is as follows:

*Can providing communication skill training reduce stress and improve health outcomes for nurses and their patients?*

Evidence that our training can measurably improve outcomes could lead to large scale improvements in quality of life for nurses and can lead to economic benefits for employers due to reduced absenteeism and fewer medical errors (among other variables). The benefits of this work are far reaching and profound. We are also excited to see other scholars working with our measures evaluating CROS in other settings to see how we can improve outcomes for various

other populations dealing with this concern and thus we believe this program of research has the potential to make a significant impact on public health.

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## The World is Your Oyster when Oysters are Your World

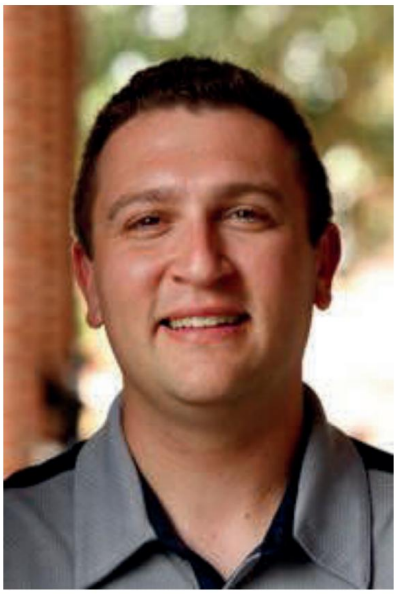
By: Russell Burke, Ph.D.

My name is Russell Burke and I have worked to restore native oysters to the Chesapeake Bay for over 20 years – 13 of those years have been spent at Christopher Newport University. I have had the pleasure of conducting research, including construction, installation, and monitoring of oyster reefs, in most of Virginia's major bay tributaries. My main focus has been on the utilization of alternate substrates for oyster reef restoration, with an additional focus on shoreline protection and coastal resilience.

I have collaborated with faculty within my department (Organismal and Environmental Biology), within the College of Natural and Behavioral Sciences (Dept of Molecular Biology and Chemistry, as well as the Dept of Psychology), and with colleagues from the College of Social Sciences (Dept of Sociology, Social Work and Anthropology) and the College of Arts and Humanities (Dept of Philosophy and Religion). In addition, my co-principal investigators have included colleagues from the College of William and Mary, the Virginia Institute of Marine Science, the Virginia Port Authority, and the United States Army Corps of Engineers (USACE). My purpose for highlighting this diversity of collaborators is that, though we each have our own disciplinary expertise, much of the work we do is interdisciplinary. I am grateful for the unique perspectives that my colleagues bring to both established, funded projects and developing project proposals. Besides strengthening our collegial bonds and enriching the products of our labors, we are each able to bring what we learn from each other back into the classroom, where students can appreciate the complexity of addressing the needs of environmental conservation and the plethora of stakeholders affected by the underlying issues and invested in these efforts.

Our loftiest goals have been in service to rural, underserved communities on Virginia's Eastern Shore, including the towns of Saxis and Tangier. Over the last ten years, my colleagues and I have submitted (and resubmitted) proposals to the National Science Foundation, National Oceanic and Atmospheric Administration (NOAA), and the Environmental Protection Agency. In support of those applications, we received letters from The Nature Conservancy, the Mayors of Saxis and Tangier, the Accomack-Northampton Planning District Commission, and the USACE. We have not received the funding support for our larger proposals, but the USACE has

been able to leverage of our 10+ years of work within these communities to garner support from US congressman and senators, with the House Appropriations Committee recently approving the president's proposal of $10.3 million for the beneficial reuse of dredged material at Tangier Island. Furthermore, our steadfast commitment to native oyster restoration in Chesapeake Bay has led to NOAA's declaration that the federal goal of restoring 10 Chesapeake Bay tributaries by 2025 will be met. And, as for the oyster restoration program's trajectory beyond 2025, the Norfolk District of the USACE proposed, and received approval for, its most ambitious project yet. . .$100 million in support of large-scale oyster restoration in the Tangier-Pocomoke Sound region of Chesapeake Bay! This fantastic news was followed up by an announcement from NOAA last week that Maryland is to receive another $10 million to continue expanding their native oyster restoration network. CNU has supported my pursuit of these long-term goals and can stand proud to have played such a pivotal role in the restoration of the world's largest oyster reef sanctuary network. CNU's mission for its Captains to lead lives of significance is certainly on full display here, as we are making meaningful, notable contributions in our community and beyond.



## Dancer/Scholar

Ann E. Mazzocca Bellecci

Associate Professor of Dance

As a dancer scholar, my work as educator, artist, and writer emerges from the tenet that dance in all its forms and in its broadest definition holds immense potency as site of knowledge, memory, history, futurity, meaning-making, communication, reflection, resistance, and liberation. Dance speaks. Dance does. And also, dance writes…inscribing meaning through bodies in motion in relation to place, space, time, and each other.

I began my academic career after performing professionally with Haitian and Cuban folkloric dance companies based in New York City. Once I began traveling to Cuba and Haiti, I became inspired by the communal living and intimacy that I encountered in the countryside of Haiti, the fervor, spiritual labor, and embodied practices in both Haitian and Cuban African-based religious contexts, and my experiences in the diasporic Haitian and Cuban folkloric dance communities in New York and Miami. My choreographic work has generally approached folkloric dance, the codified movements of embodied sacred traditions, through contemporary dance methods such as improvisation, collaboration, juxtaposition, and self-reflexivity. As a white U.S. choreographer and performer, I am conscious of my privilege and ambivalent positionality as insider and outsider related to dance forms of the African diaspora, sacred embodied practices that evolved in the midst of violent displacement, oppression, occupation, and ongoing settler colonial legacies.

Over the past ten years, my professional performance projects have largely been collaborative, site specific, and ethnographic since first working with Haitian and American choreographers in downtown Port-au-Prince, Haiti on a project in residency that engaged with the aftermath of the 2010 earthquake – performing on the foundation of an artist's home that had collapsed and not yet been rebuilt five years later. This began a practice of working closely with these collaborators across our differences of gender, race, nationhood, and sexuality through dance- and place-based inquiry that continued in Jérémie, Haiti in a central plaza of storied monuments, and then brought us to New Orleans exploring the relationship between Haiti | Vodou and New Orleans cultural vitality as it relates to ecological precarity. Here we developed the Tè Glise Collective, a

name based on the Haitian Kreyòl/Creole phrase meaning sliding land – a precarity referencing both natural and social ecologies. We are a group of performers, scholars, and Vodou *houngan* who come together through deep investments in Haitian spiritual knowledges and African diasporic performance genres: Vodou, Haitian folkloric dance, jazz music, and improvisation. These experiences inform our Africana perspectives on place, personhood, ancestry, movement, performance, improvisation, and ceremony. During the pandemic our collaborative work turned toward video in which we created, "Tributaries," a 12-minute short experimental video tracing riverine remembrances and cultural movements along three active waterways – the Mississippi, the Kwinitekw/Connecticut, and the Powhatan/James.

This brings me to my most recent project, a 20-minute film entitled, "Waters Wisdoms: Honoring and Reclaiming Indigenous and Ancestral Practices in the Face of Climate Disaster," in which I centered former students Krystal Hurr (CNU '19) and Kayla Oosaseun Jewette (CNU '14) as they danced and described the ways in which their Ottawa and Yoruba ancestral knowledge systems and practices honor, respect, and engage in relation with and care for the earth, its inhabitants, and oneself while offering deep healing for self, community, and the earth. My colleague Denise Gillman, artistic director of CNU's annual Art(S)cience Festival, commissioned this piece and I received Summer Scholar funding from the Office of Research and Creative Activity (ORCA) to support art major and film studies minor Henry Engelmeyer ('24) who served as director of photography on the project and co-editor. This film is now published in *The Black Theatre Review*, a peer-reviewed open access online academic journal.

My written scholarship focuses on Haitian ritual choreography, sacred landscapes, African diasporic folkloric performance, and collaborative performance praxis including book chapters published in the edited volumes *Vodou in the Haitian Experience: A Black Atlantic Perspective*, the *Oxford Handbook of Shakespeare and Dance*, and the *Oxford Handbook of Black Dance Studies* (forthcoming), and co-authored journal articles in *Women and Performance: a journal of feminist theory* and *The Geography Teacher.*

Dance reveals to us who we are, where we came from, and where we're going. The body contains deep wisdoms so that when it is in dynamic motion, in the specificity of place, and in relation to another, meaning-making occurs and transformation is possible. I encourage students to think about dance in their own lives and experiences and to embrace their own bodily knowledges while also developing a sensitivity to the role dance might play in another's community. Ultimately, we learn more about ourselves and each other through dance.

## How Public Debt and Trade Affect the German Economy, By George Zestos (professor) and Samuel Raymond (student).

This article is based on research conducted by a group of CNU professors and students in the Department of Economics. It is based on the paper**:** *Public Debt, Current Account, and Economic Growth in Germany: Evidence from a Nonlinear ARDL Model* written by George Zestos, Yixiao Jiang, Alex Hamed, and Samuel Raymond. The paper was presented at the World Finance Conference at Kristianstad, Norway on August 2-4, 2023, by Zestos and published in *The Journal of Economic Asymmetries,* an Elsevier Journal in September 2023 in Toronto, Canada.

The purpose of the paper is to investigate the effects of German exports and public debt on the German GDP. Both the professor (Zestos) and the student (Raymond) contributed in the writing of this paper, as a result, this paper consists of two parts:

**First part by Dr. Zestos:**

In order to construct a model that explains the growth of the German GDP, we included two explanatory variables, German exports and public debt. The selection of these variables is based on historical reasons of the German economy, whether this pertains to the modern Republic of Germany or the German empire sine its establishment in 1871.

It was customary in the 19th century that empires possessed colonies, and Germany was no exception; it occupied 22 colonies worldwide, most of which were in Africa. These colonies provided resources such as agricultural products, minerals and raw materials that supported the economic development and growth of the new German empire for many years. During the prolonged economic recession in 1873-1879, Germany realized that exports to its colonies were a solution to its economic crisis. Since then, colonies have started to become an outlet for German exports, contributing to the country's economic growth.

From colonial times to the end of WW II, Germany issued a large amount of public debt to finance colonial expeditions and wars. The German Empire, and later Germany, shifted the debt to the defeated and occupied countries, which worked well as long as Germany as was winning. The German public debt problem, however, became unsustainable when Germany lost WWI in

1918. The signing of the Versailles Treaty concluded that Germany was guilty of the war and solely responsible for the large war reparations. The allies-imposed reparations on Germany amounted to tenfold its national production. The situation regarding the repayment of the German foreign debt (war reparations) evolved quickly. After the government printed money to meet its foreign debt obligations, Germany experienced hyperinflation in 1923 which eventually led to the collapse of the Weimar Republic.

The Weimar Republic was born just a few days before WWI ended. A group of sailors and dock workers seized the opportunity to create a democratic republic after a mutiny by abolishing the monarchy and forcing the abdication of the emperor Kaiser Wilhelm II. The Constitutional Assembly met in the town of Weimar in central Germany since Berlin was a very unsafe and chaotic place at that time. Although the new leaders were very progressive and envisioned transforming Germany into the most liberal democracy in Europe. However, their dream could not be achieved for numerous political and economic reasons. The Weimar Republic lasted for a relatively short period from the end of WWI in 1918 to the election of Adolph Hitler in 1933. As discussed below, these years were of extraordinary significance for the future of Germany, its economy, public debt, and world peace.

**The War Reparations**

Since the hyperinflation of 1923, foreign countries, especially the US, played a positive role in helping Germany's economy out of the doldrums. In 1924, Charles Dawes, the Director of the United States War Debt Commission, introduced the Dawes Plan to reduce the annual reparation payments by half and stated that Germany would be reorganized with Allied supervision and a new currency: the Reichsmark. Meanwhile, foreign (mostly American) banks provided loans to the German government to stabilize the economy. As a result, Germany made payments to the European Allied countries, which were able to service their own public debt to the US. The Allies were able to negotiate with a cooperative German government led by Gustav Stresemann. He eradicated hyperinflation and led the German economy to economic growth. Stresemann accomplished that by supporting the policy that Germany must pay its debt reparations to the Allies. He also convinced the French and the Belgians to withdraw their armies from the Ruhr region.

In the Fall of 1928, another committee was formed to conclude the final settlement of the German War Reparations. The committee was chaired by Own D. Young, the head of General Electric company. The plan set out to reduce the German War Reparations to 121 billion German gold Marks and withdraw all foreign military forces from Germany. The Young Plan, however, could not have come at a worse time, as the next year the Great Depression began, and US banks ceased lending to Germany after the market crash. Economic conditions were deteriorating everywhere. This motivated US President Herbert Hoover to declare a moratorium on all debt and reparation payments. However, it was not extended through1932, and the European countries needed help to keep their Lausanne Conference promise to cancel the German public debt. This happened because the US refused to cancel their debts; thus, all European countries, except Finland, defaulted. Nevertheless, the Young Plan was responsible for establishing the Bank for International Settlements (BIS).

In 1933, Adolph Hitler, the leader of the Nazi party, won the national elections and became Chancellor of Germany. Hitler quickly made it known that he would not pay the war reparations and would not abide by the treaty. This Nazi platform was the most effective propaganda that contributed to their victory in the 1933 elections. Germany paid reparations for WWII but not in terms of cash. The Allies learned the lesson from WWI reparations. They imposed forced labor on several millions of German prisoners (POWs) and also “transferred” intellectual property rights from the Germans to themselves. Furthermore, the German reparations can only be paid out of revenue generated by the country’s exports. This is a second reason that influenced Germany to become an export-oriented economy or as economists call it an export led-growth economy.

***German public debt after WWII***

The end of WWII marked the beginning of a new era for Germany. In 1949, Germany was divided into two countries and was heavily indebted more than 30 billion Deutschmarks to 70 countries. The German government announced that it would pay its WW I reparations as it realized that this would be the only way to return to economic growth by receiving cash inflows. Nevertheless, West Germany achieved an exceptionally high annual growth rate of 8.3% for

1951-1960, known as a miracle growth period. Since then, Germany has become one of the most rapidly growing economies in Western Europe.

The phenomenal growth was gradually achieved after one key event. In 1953, the London Debt Conference cancelled half of German public debt and made the repayment period longer. The most important provision of the London Debt Conference was that Germany would be required to pay only if it generated a trade surplus. This provision served as a strong incentive to Germany to generate prolonged trade surpluses in order to grow. Such an approach would allow the Allies to receive war reparations. After the London Debt Conference, the macroeconomic nexus of the current account, economic growth, and public debt was crystalized and made Germany the most efficient and largest European economy.

After the recession of 1981-1982, the economy of former West Germany picked up quickly because of fiscal austerity and restraint by the Deutsche Bundesbank. Due to its ability to meet the demand of both its local and overseas markets, West Germany experienced low unemployment, low inflation, and steady growth in GDP. After the reunification of the two Germanys with the collapse of the Berlin wall in 1989, West Germany, under the leadership of Chancellor Helmut Kohl, applied a very expansive fiscal policy to promote the economic development of East Germany to catch up to West Germany. Thus, such public expenditures aimed to speed up the economic convergence of the divided country. Reunification turned out to be very costly. As a result, Germany experienced a sharp increase in its public debt.

The reunification has also led to dramatic and continuous decline in the state of Germany's public finances. To reverse what some German economists considered “profligate” spending, the government supported a new fiscal policy to restrain the rising public debt. Germany pursued this austerity policy by legislating what became known as the debt brake, which in 2019, was inscribed into the German Constitution. As a result, the debt brake prohibits the Government and its 16 States (regions) from running structural deficits above 0.35 percent of its GDP. However, with the initiative of the German Parliament, the German public debt brake was suspended to enable the government to fight the 2020 COVID-19 Pandemic and manage the energy crisis. Finally, with this decision, the German government seems to have reversed its long-standing opposition to solidarity with the Southern EU countries. During a period when long-term interest

rates were close to zero percent, this was a correct decision that should have been taken long ago to end the Eurocrisis.

Set in support of this historical background, we introduce an applied econometric model that aims to explain German GDP growth (Yg), according to four explanatory (independent) variables Public debt to GDP ratio (PD), which is one of the two most important variables in the model. The other most important variable is the Current Account (CA), a proxy for trade balances proxied by exports (X) minus imports (M), (X-M). Germany, for many years, generated large CA surpluses and has been criticized as a major cause of international instability and for the prolonging of the international financial crisis. The latter began in the US as the US Subprime Mortgage Crisis (2007-2009) and spread in Europe since 2010 as Eurocrisis and elsewhere in the world. The model also includes as explanatory variables the world GDP Yw and the nominal interest rate (R10).

The econometric model we employed is the Linear Autoregressive Distributed Lag Model (LARDL), which we estimated for the period 1959-2019 for 60 annual observations. However, according to the empirical results of this model, the Current Account (CA) and the Public debt- to -GDP ratio (PD) were both statistically insignificant. Such results cannot be accepted as it is well known in the literature that both the CA and the PD are very important in determining GDP growth. Consequently, we estimated a variant of the linear ARDL model the Nonlinear (NARDL). According to this estimated model, the explanatory variables have different impact on the dependent variable when they increase than when they decrease, In the estimated NARDL model both the Current Account (CA) and the Public Debt-to-GDP Ratio (PD) were statistically significant and had the theoretically correct expected sign. As a result, the paper not only was published in a high-quality journal but it also republished in two different volumes by guest editors of selected papers. Let as now hear by Samuel Raymond a research assistant in the research project and co-author in the first published paper.

**Second Part Samuel Raymond, Senior in Computer Science**

Researching Public Debt and Economic Growth in Germany

In the Spring of 2023, I collaborated with Drs. Zestos, Jiang, Hamed in publishing *Public debt, current account, and economic growth in Germany: Evidence from a nonlinear ARDL model* to *The Journal of Economic Asymmetries*. The purpose of our research was to better understand Germany's modern public debt situation by analyzing historical data of economic growth, including gross domestic product, current account balance, and interest rates. We began with a high-level historical overview of public debt in Germany since 1871, identifying the historical contexts of this statistic. We then analyzed the listed variables over 60 years of economic data through the use of a Non-linear Autoregressive Distributed Lag model–a mathematical model often used in economics for indicating long-term relationships between variables in a set of data. Our research demonstrated an asymmetric relationship between Germany's GDP and both its public debt and current account balance.

For my part, I contributed to the collection and presentation of the data, as well as some of the early literature review. This was a significant experience as a Sophomore as an introduction to scholarly research as well as the application and analysis of macroeconomic concepts. While diving into the subject matter is a core purpose of research, ideal research positions have meaningful faculty engagement. What made this experience most memorable was engaging with Dr. Zestos and the team. Dr. Zestos was always cheerful, considerate, and passionate about the work at hand–an attitude which I appreciated during long nights of research, writing, and revision. He clearly cared for his team members, and fostered a relationship which has continued well past the conclusion of our research together. Dr. Zestos and the team were delightful to work with and gracious in affording the opportunity to contribute to this published scholarly research.

Concluding Remarks

Germany is a unique country in many aspects since the birth of the country as an empire in 1871 and afterward, as a nation-state when it launched an expansionary border policy. Such policies led to World Wars I and II and twice to its occupation by the Allies. Between the wars, the short-lived Weimar Republic 1919-1933 was established for a short period until Nazism abolished it and spread terror in Europe. Germany's history is full of extremities and tragedies involving not only Germany per se, but almost the entire world.

The present study investigates the effects of world GDP, public debt, current account balances, and nominal interest rates on real GDP growth of Germany. Based on a linear Autoregressive Distributed Lag (ARDL) model with a sample of 60 time series annual observations, we found a long-run relationship among the variables. However, the public debt and the current account were statistically insignificant. Such findings led us to search for a different model because both the current account and public debt are expected to have a strong relation with GDP.

We resolved the problem of the unexpected empirical results by employing a Nonlinear Autoregressive Distributed Lag (NARDL) model using exactly the same variables. According to the NARDL cointegrating equation that portrays the long run relationship of the variables, there is strong evidence of asymmetries in both the PD and CA. Both have the expected signs: if PD increases then GDP declines, and if the CA increases then GDP increases. The negative PD and CA also have the correct expected signs, if PD decreases GDP increases; similarly, if CA decreases GDP decreases.