

# REVISIONS

Best Student Essays of The University of North Carolina at Pembroke

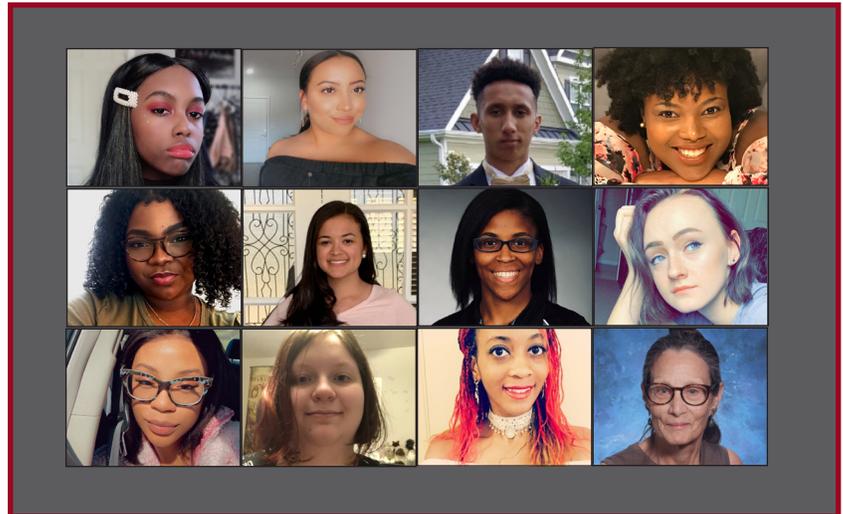
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PHOTO BY ABIGAIL CHABALA

*ReVisions: Best Student Essays* is a publication designed to celebrate the finest nonfiction work composed by undergraduate students at The University of North Carolina at Pembroke. This issue was copyedited, designed, and produced by the students in PRE 3450: Publication Design.

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Nominations to be considered for publication in the Spring 2021 issue will be accepted until December 2020. For further information, contact Dr. Teagan Decker, Hickory Hall, (910) 521-6437, [teagan.decker@uncp.edu](mailto:teagan.decker@uncp.edu).

The cover photo was taken by Abigail Chabala, a freshman Journalism major and member of the *Indianhead* yearbook staff. It depicts one of the many chain-link fences and warning signs that were visible on campus at the start of the Spring 2020 semester, as construction work began for the new School of Business building. These fences and signs took on a new meaning in late March, when all classes were converted to online delivery and the campus was closed to most students, faculty, and staff in response to the COVID-19 pandemic.

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## TRANS DISCRIMINATION AND TITLE VII: A CALL FOR NEW LAWS

By Iman Duff



Iman is a non-binary trans masculine person seeking a bachelor's of social work. They are from Gastonia, NC.

In 2016, North Carolina's legislature pushed House Bill 2 (HB2) into effect and made it a law. This law prohibited transgender people from using the bathroom that corresponds with their gender identity. This measure greatly divided the state and affected the entire country. Sports teams and other entertainers discontinued their services in North Carolina. In response to this bill, the NCAA pulled seven championships out of the state. The political climate in North Carolina was in chaos, as conservatives found more reasons to justify this debilitating statute—from posing as advocates of women and children's safety to making claims along the lines of trans women being rapists—in order to use trans rights move-

ments to mobilize opponents. Trans people have always been under attack, but as we have been gaining more visibility, discrimination in employment and in other public places is still a major problem. Furthermore, a wave of restraining legislation has emerged, such as the Trump administration's proposal to erase trans people as a legal identity. However, as many legal analysts argue, trans people are protected under Title VII of the Civil Rights Act as well as by moral standards and, therefore, do not deserve to be erased by the Trump administration, or anyone, under law—but the trans community needs a sturdier law that cannot be disputed; one specifically for us.

We do not yet have any supporting legislation because some people still question whether trans people exist or are a valid gender. Some people view trans people as either men “pretending” to be women or women “pretending” to be men, as opposed to a legitimate identity. Science settles those uncertainties. Experts concur with queer theorists in that sex and gender are not binary concepts. On a biological level, some people are born intersex, meaning their genitalia, chromosomes, and/or hormones are androgynous, which Merriam-Webster defines as “having the characteristics or nature of both male and female.” Gender, on the other hand, is determined by the mind. Dru Levasseur calls this “brain sex,” which is essentially gender identity (987). Gender identity can be defined as “how you feel inside and how you express your gender through clothing, behavior, and personal appearance. It's a feeling that begins very early in life” (“Sex and Gender Identity”). As for the misconception that being trans is a “choice,” Levasseur quotes Professor Jillian Weiss' refutation that “gender chooses us, and not the other way around” (988). Levasseur also cites attorney Rachael Wallbank's claim that undergoing gender reassignment is “to alter [the] sexually differentiated body in order to bring it into better harmony with the individual's innate sexual identity” (986). These variances in experience make sex a “multifaceted” concept. If sex can be ambiguous, then certainly gender can be as well. The results we get include non-binary, transgender, and other genderqueer identities.

Trans people need a law that provides protection against gender stereotyping discrimination. This discrimination is based on what Ilona Turner calls “gender stereotyping theory” (562). This theory argues that society assumes that each gender is supposed to act a certain way. When one fails to act in accordance with their respective stereotype, they are discriminated against (561). This was the case with Ann Hopkins, a senior manager for the Price Waterhouse accounting firm. Due to her “aggressive” and “macho” nature, she was fired. Even though she was a cisgender woman, a person whose sense of identity corresponds to their birth sex, she was targeted because of her inability to conform to her gender’s stereotype (574-575). If this is the case even with some cis people, one can imagine the discrimination a trans person faces—especially an openly trans person. Turner says that “transgender people live on the front lines of this high-stakes theoretical debate.” She discusses many cases throughout her article about trans people who brought discrimination cases to court. Some were protected by Title VII, while some others did not have as merciful judges. Nevertheless, these rulings are based on the notion of this gender stereotyping theory, which explains how trans identities are negated.

Dehumanization of trans bodies also warrants protection of trans people, even within courts. Making someone’s literal identity a legal issue is dehumanizing in itself. Putting us on a stand to debate whether or not what we experience is real is unnecessary. What generally happens in the courtroom is that a trans person’s body is picked apart, and their genitalia and information regarding transition are discussed. There is no privacy nor room for non-disclosure. These standards are not used for cis people, such as Ann Hopkins, because cis bodies are considered “the norm” (Levasseur 998). Judges can also be very invalidating, depending on their political beliefs. They may use words such as “masquerading” or “sexual identity disorder” to describe trans people’s “afflictions” (Turner 569-570).

Further, creating legislation on where people are allowed to use the bathroom is needless. It places unnecessary focus on trans peoples’ genitalia. This is especially unnecessary when there is no substantial evidence linking sexual assault to the absence of bills like House Bill 2, and therefore to trans women (McClintock). Trans people are the ones that become unsafe when these kinds of bathroom debates are incited; cis people express verbal concern as to whether trans people “belong” in the restrooms we choose to use. Trans people become uncomfortable, are questioned, or have other “consequences ranging from mere social hostility to discrimination in employment and housing to outright violence” (Turner, 561). HB2 supporters like Kaley Triller, however, claim that trans women are raping girls and that pre-op trans women “can waltz into the YMCA girls’ locker room and shower next to [one’s] six-year-old daughter as she gets ready for swimming class.” Apart from being transphobic, these claims are not true. As Elizabeth McClintock argues, rapists are going to rape people because they are rapists, and a mandate regarding trans people is not going to motivate them more or less—rapists will find a way to try to do so one way or another. Thus, trans women are not the assaulters. If this hypothetical situation were to have any grounds, it is not real trans women that are to be blamed for this behavior; it would be these alleged rapists posing as women. It is harmful for trans women to be lumped in with this repulsive demographic. As for Triller’s other claim, pre-operational trans people are still valid and do not deserve to be discriminated against for not having the resources to, or not having any desire to, physically transition. Trans people are whatever their gender identity is, which is not negated just because they are pre-op.

Iman presented a version of this paper at the English Symposium in spring 2019, where it was well received. In this essay, Iman exhibits a mature, clear writing style and makes a cogent argument for laws protecting transgender rights. Iman represents an under-represented voice and many can learn from this essay.

Catherine Parisian

## TRANS DISCRIMINATION AND TITLE VII

Some people who support HB2 and similar laws believe that we are making too much out of the entire situation and causing a loss of revenue to the state of North Carolina by bringing excessive attention to the matter. These losses included entertainers deciding to take their services to other states (Moody). This is a very dismissive take. Debates on social issues should continue because these types of discussions allow a country to move forward and tackle bigger issues in the future. Simply muting controversies for the sake of keeping money coming does not make them go away.

In conclusion, trans people are tired of having to debate for their own livelihoods. HB2 was repealed, but not necessarily replaced with something better. The *Charlotte Observer* noted that “this new law does not repeal HB2. Instead, it institutes a statewide prohibition on equality by banning non-discrimination protections across North Carolina and fuels the flames of anti-transgender hate” (Gordon). There is not much information surrounding the Trump administration’s attempt to erase trans people, but the ACLU says that the administration is “pushing for a definition of the term ‘sex’ in federal civil rights laws that would eliminate non-discrimination protections for transgender people” (Esseks). Such a definition would, in essence, erase the entire definition of what transgender people are and embody, which would allow for them to face even more discrimination with no protection.

Title VII has proven unreliable depending on the ruling judge. The general public needs to be educated on trans issues, and then there needs to be a sturdy law authorized that clearly protects trans individuals from discrimination in employment, in public places, and from hate crimes. I propose that there be state-mandated legislation first, and that the federal government eventually base their own off of the most efficiently implemented state laws. Trans people, particularly black trans women, are dying at alarming rates (Talusán). The life expectancy of trans people (of color) is 31, and declining (Allen). This issue needs to be addressed and dealt with, but that requires people to first see us as humans worthy of respect. Trans people as an entity are not to be “debated.” 🍌

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## THE POWER AND INTEGRATION OF RELIGION AND CULTURE IN *THE MATRIX*

By Ariana Farrington

Religion and culture are two powerful realms that affect the day-to-day lives of people. Religion and culture affect people's worldviews, their beliefs, actions, perceptions, etc. Because of the pervasiveness and penetrative influence of these concepts, religion and culture can be viewed in most, if not every, thing. One of the areas that religion and culture affect is art. Art expresses the concerns of society and people. Therefore, religion and culture can be analyzed within art works. Film is one of the newer forms of art that visually and orally portray culture and religion in a powerful way. *The Matrix* is a sci-fi movie that portrays the intersection between culture and religion in a way that allows for new myth-making and new religious expressions of human concerns and fears.



*The Matrix* partakes in a myth-making that creates a new expression of humanity and its concerns. Films like *The Matrix* are a new version of storytelling and mythmaking that revolve around visual and verbal representations rather than relying on oral traditions of the past. Plate writes, “films can show how myths operate beyond their existence as verbal stories, even as many religious studies scholars still tend to believe myths are comprised of words” (20). *The Matrix* shows that myths and their tellings are evolving to encompass new technologies and the dominant trends of culture. As technology and the popularity of films have grown, people have begun using film as a new medium for myths. *The Matrix* is a film that creates a new Christian myth with elements of other religions and philosophies, like Buddhism and paganism, in a way that combines the cultural love of movies with the religious values and stories of a culture. Plate notes that many new myths are based on older ones, which allows for new myths to be a kind of “mash up” of past myths and stories (21). This mash up allows for culture to influence the story of older myths and for people to pick out parts of older myths that still reflect human concerns in the modern time period. Plate writes “to deny the mythological origins of so many contemporary films is to risk denying something of the very humanity in the films as well” (21). This analysis of films accurately shows the importance of evaluating religious elemental mash ups since these mash ups reflect the humanity of the generation and people during the time of their creation. According to Punt, the movie’s reflection of “global technological fears, alternative futures, and the nature of reality itself” is the reason it became and remains a popular movie; the movie displays modern people’s concerns for the future and uses popular religious imagery to show a resolution to these concerns (93). In this way, *The Matrix* functions as a modern representation of a new religious-based myth that reflects the humanity and human concerns of the modern age.

Ariana Farrington is a senior at UNCP, majoring in English literature as well as religion and philosophy with a minor in popular religious culture in America. After graduating in May of 2020, she plans on attending UNCP Chapel Hill for her doctorate and specializing in new religious movements.

Religious elements of Christianity and the story of Jesus are present throughout *The Matrix*, which allows people to fully relate to and grasp the fear present in the myth of the movie. Stucky refers to *The Matrix* as “the Gospel of Neo, the coming of age of the post-modern messiah, his death, and his resurrection” (2). Referring to the movie in this way works well since it shows the relation of the movie to the Bible and the Christian religious story. Neo, the main character, functions as a Christ-like figure throughout the movie. The directors established Neo’s identity as a messiah early on when a group of people go to Neo’s apartment to buy illegal computer software from him. When the people buy the software from Neo, the one man says “Hallelujah. You’re my savior, man. My own personal Jesus Christ.” Stucky mentions that this foreshadows the role Neo has later in the movie when he takes on the greater challenge of destroying the matrix. By having one of the men say this early on in the movie, the directors are forming the connection between religion and the movie, particularly between Neo and Christ. Using this imagery allows for the viewers in the broader society to understand the significance of the movie and to relate to it on a more personal level. America is a Judeo-Christian society where many people, even the ones who are not Christian, know the story of Jesus and the role that he has as savior in the Christian religion. Therefore, establishing Neo as a Christ figure allows viewers to understand the role Neo occupies in the movie and, for those who may be Christian, to grasp the full importance that Neo will have in the movie as a savior.

*The Matrix* further uses religious imagery by creating a Satan-like figure that challenges and battles the Christ-like figure, Neo. Neo’s role as a Christ-like figure is further signaled in the movie through his name. Neo is an anagram for One, which represents the One messiah and the One savior. Additionally, all computers have to use computer code in order to program and create, and this code solely uses arrangements of the numbers 1 and 0 in order to produce meaning and create programs (Stucky, 5). While Neo is the 1, the Satan-like figure in the movie, Cypher, is the 0. As Stucky explains, “In binary code, a cypher or 0 is the opposite of 1. Neo is the One; Cypher is the anti-One” (5). The directors used computer code to help create the existence of the Satan-like figure and the Christ-like figure in order to immerse cultural and religious themes. In Christianity, Jesus has his counterpart in Satan since Jesus is the savior of mankind and Satan is its ruin. The directors and writers of *The Matrix* combined this element of Christianity with present day technology and computer code in order to create a new spin on the apocalyptic Christian myth that updates the story to reflect modern fears and anxieties about technology.

The figure of Morpheus is also used to tie *The Matrix* to religion and religious values by making the character comparable to John the Baptist. Morpheus’ first encounters with Neo are reminiscent of John the Baptist’s exchanges with Jesus. Stucky describes an interview with Laurence Fishburne, the actor who plays Morpheus, in which he compares the scene where Morpheus and Neo meet for the first time to one of John the Baptist’s interactions with Jesus. When Morpheus and Neo first meet, Neo says, “It’s an honor to meet you,” and Morpheus says back, “No, the honor is mine.” Laurence Fishburne compares this to the situation with John the Baptist where he says to Jesus, “No, I would rather be baptized by you” (quoted by Stucky, 3). The similarities in these conversations help to show the relationship between Neo and Morpheus and connect their characters to more religious elements. Although the audience may not initially see the similarity between Neo and Morpheus’

In this essay Ariana elucidates how the film *The Matrix* draws upon religious themes and myths from Christianity, ancient Greco-Roman religion, Buddhism, and contemporary culture to weave a powerful new myth that addresses societal concerns about technology and artificial intelligence. For all her written assignments, Ariana produces thoughtful, thorough, critical, and constructive work.

David Nikkel

exchange and John the Baptist and Jesus' exchange, the relationship that is established in that moment would be reminiscent of Jesus and John the Baptist in a way that would be familiar to the audience. The John the Baptist connection to Morpheus is more overtly shown in the baptism scenes of each character. John the Baptist is the one who baptizes Jesus, which afterwards reveals Jesus to be the Son of God (Stucky, 4). Similarly, Morpheus is the one who offers the pills to Neo, which allows him to awaken into the real world where he rises from a watery pod. This scene is comparable to Jesus' baptism since both scenes use water imagery as a form of rebirth and revelation (Ford, 3). Therefore, since Morpheus is the one who triggers and is responsible for Neo's awakening from the matrix, he is analogous to John the Baptist.

While Christianity is one of the main religions present in *The Matrix*, other religious elements are present in conjunction with Christianity, which is also shown in the character of Morpheus. The character Morpheus' name is a reference to the Greco-Roman pagan god of sleep and dreams (Plate, 30). By naming the character Morpheus, the writers and directors of *The Matrix* were using religious and mythological elements that the audience would be able to recognize, so that the audience would be clued into the role Morpheus plays in the movie. While his name is a hint at the god of sleep and dreams, Morpheus' role in the movie further portrays this similarity by being the person responsible for waking people out of the matrix. The first time that Morpheus communicates with Neo is through Neo's computer at the beginning of the movie. When Neo sits down at his computer, the screen goes black and the words "Wake up, Neo" appear on the screen. In this, Morpheus is directly trying to wake Neo out of the fictitious dream land of the matrix. This role relates to Morpheus' association with the pagan god Morpheus. The combination of the religious element with the film character shows how religion can be used to deepen the symbolism within a movie. Because of the association to the Greco-Roman god, Morpheus' name functions as a symbol that points to the nature of his character and drawing on religious imagery gives power and meaning to Morpheus' name and character.

Aside from characters within *The Matrix*, religious elements are also connected to the ship that Morpheus and his crew pilot, as well as to the remaining human civilization that lives outside of the matrix. The name of Morpheus' ship is the Nebuchadnezzar, which was the name of one of the Babylonian kings in the Old Testament. The name given to the ship is significant because, as Stucky notes, "Nebuchadnezzar was the Babylonian king who could not remember his dreams until they were interpreted by Daniel" (7). This religious imagery thus contributes to the importance of Morpheus and his representation of Christian and pagan elements. Since Morpheus is the god of dreams, his control of the Nebuchadnezzar is fitting since he would be the one who could interpret and benefit the ship. The ship also connects the Christian and pagan elements presented through the character of Morpheus because of the plaque located at the core of the Nebuchadnezzar which states "MARK III No. 11" (Stucky, 8). This plaque refers to the biblical passage in Mark 3:11 which "describes how people possessed by evil spirits fall down before Jesus and say, 'You are the Son of God'" (Stucky, 8). This emphasizes Morpheus' role as John the Baptist since he is the first to recognize Neo as the messiah figure and it affirms the messianic character of Neo by declaring him the Son of God. The name of the last human civilization also refers to the messianic nature of Neo and contains religious elements. The last human civilization is called Zion, which is also the promised and holy land in the New Testament. Punt writes, "Zion is in the film, as in the Bible, more than a city, and holds as metaphor the promise of life, real life" (95). Like Zion in the New Testament, Zion in *The Matrix* represents clarity, holiness, and the promise of a better day and age to come. Neo's alliance with Zion and his representation of Zion's people further show that he is the messiah who will liberate them and create a better life for them all.

The plot of *The Matrix* also resembles the Christian story of Jesus in a more modern way that reflects the audience's growing concern over technology and its potential future consequences. The main event that connects Neo to the figure of Jesus is Neo's death and resurrection scene. When Neo and Morpheus' crew all go into the matrix and Cypher deceives them, Neo dies along with several of the other members. The camera zooms in on Neo's heart

monitor showing a flat line and Trinity says, “You can’t be dead,” thus thoroughly establishing to the audience that Neo has died. However, Plate writes that “Trinity comes down upon him like a spirit and kisses him” (32). Trinity’s kiss brings Neo back to life and, in his new life, Neo has new powers which allow him to stop bullets, “confirming his ultimate power over life and death” (100). The new powers coincide with his new, confirmed role as the messiah. The sacrifice and resurrection of Jesus is the most popular story of Jesus’ life, so resurrecting Neo would have been a recognizable symbol for the audience to be able to connect him to a Christ-like figure. Additionally, at the very end of the movie, Neo navigates through the fictional world of the matrix and then bends the rules of the matrix and ascends to the sky and flies in a representation of an ascent to heaven. This action by Neo represents Jesus’ ascent to heaven and contributes further to the mixture of religion and culture in the movie.

Thus far, Neo has been analyzed as a Christ-like figure; however, Neo is also representative of a bodhisattva, an enlightened being. It is worth noting that the etymological root of *bodhi* or *Buddha* means (the) awakened (one). As mentioned previously, in the beginning of the movie, Morpheus messages Neo telling him to “wake up.” By awakening to the matrix and helping to awaken others, Neo, as well as Trinity and Morpheus, functions as a bodhisattva who has achieved the enlightenment of waking up into reality but chooses to continue entering into the matrix in order to awaken others (Plate, 30). By adding the connection to Buddhism, the writers and directors of *The Matrix* create a “mash up,” to use Plate’s words, that combines popular religious ideas and symbols in order to create a new myth filled with powerful meaning. Using the bodhisattva imagery gives power to the characters and their representations by connecting them to the audience’s religious understandings and consciousness in a way that is more meaningful and important to the audience.

Overall, *The Matrix* combines the main Christian, Buddhist, and modern cultural concerns in order to create a film that shows how culture, religion, and art can relate to one another in order to express humanity. Ford notes that “for Christianity and Judaism, the fundamental problem is alienation from God due to our sinful nature and egotistical tendency toward trying to be like God,” while the main concern of Buddhism is our ignorance of existential reality” (3-4). These ultimate concerns are expressed in *The Matrix* in conjunction with the modern audience’s growing fear of technological advances and how technology and AI could affect the future of humanity. The Christian concern is depicted in the movie through the human’s destruction of the Earth in trying to become more advanced and godlike. Morpheus explains that the humans were partially to blame for the creation of the matrix. According to Morpheus, humans created AI, which was then able to continue creating more machines and more mechanical minds that eventually rose up against humans. Humans fought back against the machines, but, after burning the sky to prevent the machines from drawing energy from the sun, the machines began to use humans as a source of energy. Thus, the matrix was formed. The Christian concern is combined with cultural concerns in this explanation. The growing human concern about technology was projected as humanity’s attempt to become godlike by creating beings and advancing their society. In this, humanity’s egoism and sinful nature manifested itself through the advancement of technology. From this point, the Buddhist concern is also expressed and combined with cultural concerns. The human fear that technology and AI will eventually take over the world and control humans combines with the Buddhist idea that reality, as humans perceive it through the material world, is an illusion. The illusion is represented through the matrix, which blinds people to the real existential world that they truly exist in. Lee writes that the matrix is “what art looks like when it turns its back on nature” (54). The matrix does not reflect the true nature of the world as it exists outside the matrix and instead it attempts to replicate the world as it appeared in the 1990s. These religious concerns and elements pair well with the cultural concerns of the era in order to show the true depth and power of human fears and human hopes.

*The Matrix* shows culture and religion’s ability to combine and create new versions of older myths and stories that better reflect the current trends and values of society. Using older myths and symbols allows for art to retain a level of power that it may not have otherwise. Traditional stories and myths are something that people can relate to

and, in many instances, have been internalized and occupy the collective unconscious. By tapping into this powerhouse of association, filmmakers and other artists can bring a higher level of power and influence into their works. *The Matrix* draws upon the rich traditions of Christianity and Buddhism in order to create a new myth that reflects the modern concern about technology in a way that is extremely meaningful to its audience and the culture at large. The integration of religion, art, and culture into *The Matrix* has allowed it to continue to be a well-loved, popular movie that continually influences the creation of new works of art. 🍷

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## MORE TO CONSIDER

By Hannah Irving



Hannah Irving is a freshman at the University of North Carolina at Pembroke pursuing a double major in Sociology and Political Science, Pre-Law Option. When Hannah is not in class, she works at a no-kill animal shelter in the Fayetteville area. Her favorite activity is watching *The West Wing* with her husband and 3 dogs.

Hechinger Report editor Jon Marcus addresses the rising cost of college in “The Reason College Costs More than You Think.” Marcus argues that few people truly understand the cost of college, and by underestimating the time it will take for some to graduate, students end up with more debt, lost wages, and class credits they do not need. Even though most students and parents plan for four years of tuition, if a student has to take an extra one or two years to obtain their degree, the student is often stuck paying for those extra years with loans, as financial aid rarely covers a fifth or sixth year. Marcus explains that students are at least partly responsible for not graduating on time; by switching majors, failing core classes, and taking less than 15 credit hours, the student falls off the track to graduation. While Marcus makes a compelling argument, I find his assertions exclude some of the most important problems facing college students today.

In today’s economy, a college education is an important commodity, but the average cost of attendance has tripled from 1988 to 2019, according to the College Board (“Average Published Charges”). While Marcus argues that students who take longer to finish their degrees lose wages and increase their debt, he ignores the financial burdens placed on students after high school graduation. A report by Georgetown University states that around 70% of enrolled students work at least part time. The report also discloses that about 40% of all undergraduate students work more than 30 hours per week (“Seventy Percent of College Students Work”). Students may seek to offset the rising cost of tuition by working to pay down loans or pay for tuition out of pocket. They may have to take time away from their studies to get by financially. By not including the struggles of working students, Marcus misses critical reasons for a student taking longer to graduate.

Marcus touches on the influence a faulty high school education can have on college students but overlooks the depth of the impact. For instance, I attended a college preparatory school that came at a hefty price tag of around \$23,000.00 per year. Unlike many public-school students, I was privy to smaller class sizes, personalized daily study hall, and a rigorous curriculum that consistently challenged me intellectually. “At least 31 states provided less state funding per student in the 2014 school year . . . than in the 2008 school year,” according to the Center on Budget and Policy Priorities (Leachman, et. al). This results in overworked, underpaid public school teachers and a surplus of students that may not be learning the necessary skills to thrive in school. For these students, the unrelenting pace of academia can be paralyzing. Marcus glosses over an important aspect of the cost of college and rather than confront the inequalities facing our school systems, he points the finger at students who have not been given the skills to succeed in the first place.

Throughout his piece, Marcus says that students changing majors contributes to their cost of college, but once again he leaves out a systemic issue in American society. Authority figures preach that students must have a precise plan for the future. This feeling can be overwhelming for many students. They are rushed into a decision without time to experience what the real world is like. Who can blame them for exploring the wealth of knowledge college has to offer? According to *Inside Higher Ed* almost one-third of college students change their majors in the first three years. Students should not be judged for exploring their interests when they may find a major that they truly excel at.

Although Marcus articulates his argument well and it is based in truth, he neglects important issues facing the average college student today, whether it be rising tuition prices, lack of adequate education, or a changed college major. His interpretation of the underlying causes of the cost of college is one-sided and simplistic. It is easy to blame the students rather than taking a hard look at our institutions. It may be harder to change the way we prepare our citizens for higher education, but in the long run it will lower the cost of college for all of us. By investing in all students, we will set them up on a path to success rather than struggle. 🍷

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Hannah has an exceptional gift as a writer. This essay provides a thoughtful and sensitive response to Jon Marcus's essay "The Reason College Costs More Than You Think."

Catherine Parisian

## CALL AND RESPONSE AS CULTURAL COMMUNICATION IN THE AFRICAN-AMERICAN CHURCH

By Corey Little



Corey Little is a senior at UNC Pembroke in the Department of Philosophy and Religion. He returned to college as an adult student to pursue academic credentials for service in the Christian ministry. After graduation, he plans to attend seminary and continue his studies.

Religious communication has taken on various forms within spiritual groups in different eras and places. The many modes of human communication have been used as mechanisms to convey religious meaning. At the base of the communications tree lies two major branches. The most popular and perhaps the most powerful is the verbal and audible approach. Using a common language to relate to insiders who share a common set of beliefs and practices is the most straight forward approach to religious communication. Nonverbal communication is also a method used by religious groups. One form of nonverbal communication is symbols, whether visual or gestural. Symbols, though usually inaudible, convey religious meaning to group members, and can be interpreted by outsiders. Among the array of available methods to communicate religious meaning is the unique practice of call and response preaching. Call and response preaching is the stylistic attribute traditionally expressed in spontaneous and provocative affirmations between the preacher and congregation that encourages active participation. My article comes out of my experiences of and reflections on being an AME Zion pastor. I will also make a few references to the analysis by professor of linguistics at Columbus State University, Cheryl Wharry, of discourse functions in African-American sermons, as she classifies call and response as just one of many discourse functions. This paper will demonstrate that call and response preaching is prevalent in the African-American Church because it emerged from their powerful historical religious experience and serves to affirm cultural cohesion, build emotional energy, and aids the congregation to internalize biblical stories.

### Call and Response

The call and response is a communication tool conventionally applied by African-American preachers and their congregations that extends the setting of the sermon presentation into the realm of a conversation. What makes the call and response an important topic is the distinct difference from the traditional model of a European style address. An address is characterized by a speaker who stands in front of a group and articulates a message or sermon to an audience who calmly and quietly sits and listens to the speaker for the duration of the communication. At times, an address may be interspersed with mild laughter following a carefully planned humorous note or a perhaps brief applause in unison to emphasize a major point with which the audience agrees. Additionally, some contemporary preachers might pose a question that invites a short response from one or more congregants. In general, however, an address is virtually a speaker-driven communication to an attentive

but largely inaudible audience that may occasionally culminate in a unified applause that expresses affirmation at the end.

Call and response preaching is quite different from the address. In a traditional African-American church, the sermon presentation is a session that unfolds amid regularly occurring interjections by the preacher and the congregation in a type of conversation as the topic of the sermon is being discussed. The call is a prompt, primarily issued by the preacher, to engage the congregation's verbal participation to respond to a point, thought, or idea. A common example of the call is a preacher's interrogative, "Can I get a witness?" It is not just a rhetorical question; it is a literal request for members of the congregation to verbally participate in the presentation of the sermon. Another type of call comes from the preacher in the form of a directive. A traditional command used extensively in the African-American church is the preacher's instruction to the congregation saying, "Let the church say amen." This prompt is a guided invitation to the congregation to affirm the previously stated idea or argument. A more contemporary version of the call developed in recent decades. The recent take on the call is the phenomenon of the preacher enlisting the congregation into a partnership in preaching. When the preacher wants to add emphasis to an idea, he or she does so by directing the congregation to turn to their neighbor (persons sitting directly beside the listener), and instructs them to address that person in the same words as the preacher gives. An illustration of this concept is for the preacher to say, "Turn to your neighbor and tell them you're gonna make it through this!" The "tell your neighbor" call is more current and has not been as deeply ingrained in the African-American preaching culture as other aspects, but it does demonstrate how the call and response preaching continues to evolve with younger generations.

Although the call is most often initiated by the preacher, there are instances where the congregation issues the prompt in the call and response exchange. More often the congregation adopts and expresses the response to the preacher. The response is simply an act of acknowledged affirmation or confirmation of the preacher's call for participation. The response is usually verbal. The congregation responds to the preacher by shouting, "I'm a witness," or exclaiming, "amen!" Some responses are nonverbal. They can be given in direct response to the preacher's challenge or spontaneously offered in the context of supporting statements spoken by the preacher. Some examples of nonverbal responses include gestures such as clapping, lifting one's hands, and standing up. An extreme expression of congregational response which is also relatively common in more Pentecostal traditions involve jumping and shouting in a rhythmic type dance, and some people leave their seats to run around the worship space.

Just as the congregation can initiate the call, the preacher can also answer in response to the congregation. In one way, a collective cry from the congregation can encourage the preacher in a line of argument by shouting phrases such as, "Go ahead preacher," or "You better preach!" Another example is when an individual's verbal anticipation of the preacher's next thought can provoke the preacher to respond directly to them.

The call and response is an evolving expression of the preacher's message that involves verbal and nonverbal cues that promote an engaging exchange of communication between the preacher and the congregation.

This assignment of an Academic Opinion Essay called upon students to draw upon knowledge they already possessed on a topic of their interest, supplementing this knowledge with relevant research. Corey drew upon his experience pastoring African American churches to create an original, stimulating, and well-organized essay.

David Nikkel

### Articulates Affirmation

A primary purpose that comes out of call and response preaching is that it articulates affirmation for both the preacher and the congregation. As already suggested, many non-African Americans preach their sermons in a more formal discourse, that is, a long and serious treatment or discussion of a subject in writing and/or speech. This style of presentation follows through with little or no rhetorical interruption. The primary style adopted and adapted by many traditional African-American preachers is more conversational. Two-way communication during the sermon is encouraged and expected. This type of communication first provides affirmation for the preacher. A spontaneous response from the congregation is preferred because it affirms that the sermon's subject matter, or the preacher's line of reasoning, is relevant to the congregation. If there is not a spontaneous response given, the preacher draws one of two conclusions. Either the message is not resonating with the congregation, or the people present are being negatively influenced by a somber tone set by the worship service atmosphere or set by a mood due to shared unfortunate circumstances. When affirmation is lacking, the preacher will adjust the aim of the sermon, or shift to another point of emphasis. Affirmation is often given because it can lead to a more effective preaching experience. Responding to the preacher lets the speaker know that the message is being well received. In instances when the sermon is not as appropriate to the audience, they will respond with alternative cues like, "Well" and "Come on now," that encourage the preacher toward improvement or early closure. The affirmation seeks to prevent the preacher's sermon from being ineffective, because a failure for the preacher is subsequently a failure for the congregation as well.

The call and response is affirming for the congregation also. When the preacher's sermon is addressing pertinent pressures or applicable scriptural promises, the congregation initiate the call with remarks like, "Talk about it," or "Stay rightthere preacher!" The preacher obliges in response by further affirming the point of emphasis with additional examples and application. The affirmation is important because it supports the idea that the preacher and congregation are in sync spiritually. More importantly, it is perceived that both the preacher and congregation have a sense of unity with the divine.

### Creates Collaborative Energy

The general nature of vibrant African-American worship services is energetic. In both traditional and non-traditional worship there are moments which call for solemnity, as when a special ritual or sacrament is being conducted, but it regularly returns to an energetic state. One of the linguistic functions pointed out by Dr. Wharry is when a formulaic expression is used as a "spiritual filler"—which I regard as one of the many types of call and response rather than as a separate linguistic category or function. The connotation of filler in this sense can quickly take on a meaning detrimental to the preaching experience. It gives the impression that the responses noted as spiritual fillers indicate that there is a void or that something is missing. The image produced is that of a tooth broken down by decay having a cavity that needs to be filled, or a shipping box with a valuable but small content that needs added paper or Styrofoam packing filler. It suggests that the sermon is inadequate and the verbal expressions lack substantive material and only superficially fill the perceived void. I do admit that this meaning can be accurate in some instances. However, in a large majority of cases the expressions uttered are more accurately explained as generators. Where the sermon movement has slowed or the congregational attitude is in a lull, it is the call and response that creates the momentum to regain the energy level to maintain a vibrant atmosphere.

Dr. Wharry elaborates on the writing of thinkers who attribute some of the features of African-American preaching to "survivals" or "retentions" from the cultural identity of West African tribes. Her description of one of the survivals as "the spiritual filler" underestimates, I think, the cultural heritage and high energy demand of corporate religious communication. The preacher at times will generate energy through a monologue exhortation which does not specifically call for a congregational response. The congregation, however, if in spiritual harmony with the preacher's sermon, perceives it as an invitation to join in the process of building up the vigor of the atmosphere.

Another approach is when the preacher verbally prompts the congregation to praise with direct instruction like, “Come on put your hands together,” or “Can I get somebody to praise the Lord!”

Long silent periods are not natural to the African-American worship environment. The preacher sometimes pauses briefly for an insight to be digested but will quickly move on to the next idea. If the congregation experiences an uncomfortably long pause, for example when the preacher finds him or herself overcome by moments of personal emotion, they will often spontaneously respond with clapping or outcries like, “That’s alright,” or “Go ahead and praise him!” What some might interpret as a mere filler of space and time is actually an intentional effort to create a resurgence of dynamism.

### **Solidifies Stories**

The narrative nature of traditional African-American preaching easily lends itself to storytelling. Telling good stories is a valuable tool in the African-American preacher’s resources. It is important because historically people who constituted the African-American community were largely illiterate. Telling biblical stories was a way to inform people, mostly uneducated, about the content of the Bible which was overwhelming in content, language, and size. The content needed careful attention because it is spiritual in nature and could not be handled by the average lay person, but a sense of authority was given to the preacher. The preacher was esteemed and trusted because, in many cases, they were more educated than the general community. Storytelling by the trained preacher was compatible because it was the main teaching model that Jesus used in the scriptures. Biblical stories about Jesus describe how he would pose questions to his listeners while teaching them. Some questions were rhetorical, but others were given with the expectation of an active response. The teaching of Jesus is, in a way, a precursor to the call and response style preaching.

Storytelling fosters call and response preaching because it allows the preacher to help the listener overcome the arcane language of the King James Version of the Bible. The preacher can omit complicated phrases and names, usually without taking away from the main meaning, and then challenge the congregation to repeat the important aspects of the stories until they become familiar. Similarly, breaking down the familiar Bible stories into small chunks of narrative, which the congregation can relate in the call and response sermon exchange, creates language links that make the stories stick.

### **Culminates in Celebration**

Call and response exchanges during the sermon flow with an increasing pace. The call and response in celebration is an extension of the energy producer purpose but differs in intensity and style. Initially, both the call and response are sporadic and mild. However, as the sermon progresses, so does the rate of interjection by the congregation, and the pace at which the preacher prompts them to respond. Generally, in keeping with the pace of the unfolding plot of the sermonic story or scriptural argument, it can rise to a feverish pitch.

The sermon closing is an anxiously anticipated point to which the congregation has been patiently moving. During this final transition of the sermon, the call and response can become even more elevated and rhythmic. The preacher’s voice remains at a high pitch throughout the closing statements. Likewise, the congregation traditionally erupts in praise at the release of the sermonic tension set free by the conclusion or resolution of textual problem dealt with in the content of the sermon. It is customary that the preacher recaps the main ideas of the message as the congregation responds. The closing exchange of communication can take on a rhythmic nature referred to as “whooping” in the African-American tradition. The climactic close is a culminating call for the congregation to respond in a celebratory manner.

Hymns or other songs lyrics are sometimes used as closing clauses. The songs facilitate the rhythm of the preacher’s “whoop” and easily draws the corresponding response by congregation who are familiar with the words.

## CALL AND RESPONSE AS CULTURAL COMMUNICATION

The height of the call and response flows with the conclusion of the sermon and creates an atmosphere, not of a feverish chaos, but of controlled charismatic celebration.

### Conclusion

In conclusion, call and response is a stylistic choice that characterizes much of traditional African-American preaching. It is a conversational method of sermonic communication between the preacher and congregation. Both preacher and congregation participate in the preaching session with the preacher presenting the sermon in an interactive way which invites the congregation to respond in verbal affirmation and nonverbal gestures to which the preacher him or herself also replies. The unique mode of preaching is a historically adopted method of conveying religious and cultural messages within a community who could not openly worship for fear of racial backlash. The spiritual hopes and dreams of oppressed people were shrouded in codes, and their non-threatening expressions of worship were rhythmically exchanged between leader and congregation. The call and response remains a fundamental and meaningful aspect of the African-American preaching tradition. It continues to reflect the heritage of hope for people who are facing different types of oppression, and it is a celebration of liberation for the degree of deliverance that is now a reality in the African-American cultural experience. 🍷

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# GLOBAL CLIMATE CHANGE AND ITS POTENTIAL FOR DISASTROUS EFFECTS ON NORTH CAROLINA WILDLIFE

By Regan Scott

## Introduction

Global climate change is caused by the entrapment of gasses in our atmosphere, which causes the entire planet to experience rapidly rising temperatures and the many unwelcomed effects that come with these unprecedented temperatures (Shaftel 2019a). In North Carolina, it has the potential to have drastic effects on humans and our daily lives and especially on wildlife. Climate change can lead to the loss of habitat, encroaching shorelines, more intense tropical storms, and extremely hot weather (Shaftel 2019b). Wildlife that has lived in North Carolina for thousands of years may have to move north to accommodate the rising temperatures, leading to the potential loss of many native species (Defenders of Wildlife 2009). However, North Carolina is making some headway to combat these effects. In 2018, Governor Roy Cooper created the North Carolina Climate Change Interagency Council in an effort to bring together members from different departments of government to create a strategic plan to combat climate change in North Carolina (North Carolina Environmental Quality 2018). Global climate change has immense potential to devastate the local wildlife and habitat of North Carolina, and many efforts are needed to prevent climate change from reaching its worst potential.

## What is Global Climate Change?

Global climate change is the exacerbation of the natural process known as the greenhouse gas effect (Shaftel 2019a). An increase of heat-absorbing gasses in the atmosphere, such as carbon dioxide and methane, has led to heat being trapped near Earth's surface. Carbon dioxide and methane are both released by natural processes, but the industrialization of society and increased demands for energy and resources have led to an imbalance in this natural equation. There is an amplified amount of carbon dioxide in the atmosphere, partly because of deforestation (Shaftel 2019a). Trees naturally sequester carbon dioxide by using the gas for photosynthesis to create sugars and oxygen. However, trees have been cut down for timber usage or land clearing for development, and now humans are left with rising amounts of carbon dioxide in the atmosphere. Carbon dioxide levels have increased tremendously since 1800 (Shaftel 2019a). This time period correlates with increased industrialization and the burning of fossil fuels, which is another main source of increased levels of carbon dioxide. Humans have created multiple problems that feed other aspects of climate change. Forrest lands are cleared to make space available for industrial development. Then fossil fuels are burned for energy to run factories and automobiles. So, there are



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elevated levels of carbon dioxide in the atmosphere and the only natural way to remove it has been removed itself. Deforestation coupled with the burning of fossil fuels leads to an ever-warming climate.

There are also increased levels of methane due to increased livestock production and its associated wastes (Shaftel 2019a). With the industrialization of society, many people are experiencing higher qualities of life than they would have historically been expected to experience. With this comes the desire for a diet that has a large basis in animal protein. This has led to the deforestation of many thickly forested areas so they could be converted to graze land for cattle. Cattle production acts as another feedback loop that adds to the problems of climate change by way of increased methane production. When comparing the quantity of these gases in the atmosphere, there is significantly less methane gas than carbon dioxide, but when comparing the two on a molecular level, methane retains more heat in the atmosphere (Shaftel 2019a). Elevated levels of methane and carbon dioxide are problems humans have created.

There is proof that the Earth is warming fast. Scientists can say with a 95 percent confidence that humans have caused a warming of the planet (Shaftel 2019a). Scientists know these atmospheric temperature changes cannot be attributed to increased radiation from the sun because they have observed cooling of the outer layers of the atmosphere, while there has been warming of the inner layers of the atmosphere. The actions of humans in the last few hundred years are creating temperatures on Earth's surface that are unprecedented since modern human life began.

Global climate change has already changed many historic seasonal patterns of climate (Bhattarai 2017). Glaciers are retreating from lower latitudes, and species that thrive in cold environments have had to shift their habitats. Many species are emigrating into areas they had not previously lived in, and some species have been faced with a much higher threat of extinction due to climate change (Bhattarai 2017). Climate change may also lead to increased drought and make some ecosystems more susceptible to fire. There are also studies that show that fruits are ripening two days earlier each decade and that migratory birds are starting their spring migrations sooner but leaving for their fall migrations at the same time (Bhattarai 2017). These results show that species are already changing their usual habits to accommodate for the increasing temperatures of climate change. With migratory birds staying in their spring locations for longer periods of time, there will be more of a strain on resources and other species in that area due to the extended stay of the birds.

### Climate Change Effects in North Carolina

Though climate change is a global activity, its affects can be witnessed in select locations of the globe. North Carolina has experienced its fair share of these effects, including temperature and precipitation changes. With increased levels of greenhouse gases and their radiant energy properties, higher temperatures are expected (Bhattarai 2017). North Carolina is facing these warming temperatures. Recorded temperature changes over the last 40 years for the southeastern United States have shown that winters are much milder than before and summer temperatures are increasing (NC State University 2019). These increased temperatures will lead to increased evaporation of water and, thus, more precipitation (Shaftel 2019a). There may also be a change in the distribution of precipitation, causing tradi-

Regan's paper is an expertly written account of the causes of climate change and its consequences for North Carolina's native species and natural environments. The topic is timely and critical. Her paper is truly one of the best student papers I have seen in many years!

Lisa Kelly

tional precipitation patterns to change for many areas. Areas that have traditionally experienced moderate rainfall may receive more rainfall than usual, or some areas may be faced with droughts they have never experienced before. With the impending effects of climate change, North Carolina may experience both of these scenarios. For the Southeast, autumn is already receiving more rainfall than in previous years (NC State University 2019). While the amount of rainfall for the area has remained constant, rains are coming in shorter and heavier spurts with prolonged periods of no rainfall. Instead of more evenly distributed rainfall, North Carolina is faced with dry spells paused by heavy rainfall, which may cause flooding in areas with poor drainage. Droughts in the summer and winter months are expected (Defenders of Wildlife 2009). Increased temperatures and sporadic rainfall patterns could cause much strain on local wildlife and crops grown in the region (NC State University 2019). North Carolina's coastal and mountainous regions may experience the most dramatic changes to their habitats.

Warming air temperatures are warming ocean temperatures. This has large implications for North Carolina's coast. Warmer surface temperatures will lead to glacial melting and rising sea levels (Shaftel 2019b). There will be more ocean water in liquid form, and it will be warmer than ocean waters have been in previous years. Warmer water consumes more room than cool water, so a warming ocean will expand and take up more room, moving coastlines inland (Shaftel 2019b). It is estimated that that sea levels could rise by nearly two feet by the next 100 years (NC State University 2019). North Carolina's coastlines are likely to be relocated and already low-lying areas of North Carolina, such as the barrier islands, are expected to experience more frequent flooding. This is a major concern since North Carolina trails only Florida and Louisiana in number of acres of land that are below one meter of elevation (Defenders of Wildlife 2009). This poses a huge threat to residents as well as terrestrial wildlife who are not equipped to handle increased flooding.

With rising sea levels there is also expected loss of habitat for North Carolina marine life. Rising ocean levels have the potential to increase the salt levels of estuaries and wetlands near the North Carolina coast (NC State University 2019). This will completely alter the habitats to which these species are adapted. They may not be able to adapt to increased salt levels and their populations may dwindle or they will have to relocate to less affected wetlands to survive. Species that are accustomed to cool waters will also be heavily affected by climate changes. Cool water species such as fish, mussels, and crayfish will be threatened with the warming of North Carolina waters (Defenders of Wildlife 2009). This will also threaten local economies along the coast as there are many fisheries that farm cold water species.

Another problem already affecting North Carolina species is more intense tropical storms. There is evidence to suggest that North Carolina and surrounding states will suffer more hurricanes above a category three (NC State University 2019). There will be faster winds and more rainfall on land through the duration of the storms. These storms will bring floods that may last several days, creating problems of displacement and food shortages for many wildlife species. Tropical storms bring disastrous effects that are only made worse due to climate change.

Climate change will also disrupt several natural processes in North Carolina. Invasive species adapted to warmer climate may outcompete native species (Defenders of Wildlife 2009). Many species are now able to move to higher latitudes due to the changing conditions associated with climate change (Mccracken et al. 2018). Brazilian free-tailed bats are an example of a species in North Carolina that is expanding its range. These bats eat a variety of food sources including insects and roost in caves as well as artificial structures, which makes them habitat generalists (Mccracken et al. 2018). These bats established permanent colonies in western North Carolina beginning in 2007. These bats have expanded their traditional habitat range because they are likely to search for new habitats and migrate across large distances. However, climate change has facilitated this northward dispersal with higher temperatures, which allow these tropical bats to live in areas that had once been much too cold for them (Mccracken et al. 2018). Other species who are habitat generalists and have wide-ranging dispersal capabilities are expected to invade other habitats due to the favorable conditions that have arisen with climate change (Mccracken et al. 2018). With

the appearance of species in new regions, native species are likely to be subjected to increased levels of competition, placing more strain on native species as well as the entire ecosystem. Invasive species may be better equipped than native species to gain resources, leading to the eventual population shrinkage and possible removal of the native species from that area altogether (McCracken et al. 2018). Pests and diseases are infiltrating communities at higher rates, taking advantage of the favorable conditions that come with climate change.

Habitat loss is another challenge facing local species in the wake of climate change. Shifts in water availability or the intensity and frequency of fires may completely alter habitats to the point that they are no longer suitable for many species (Defenders of Wildlife 2009). When a species loses its habitat, it is likely that it will be extirpated from its local area. Changing weather patterns may also lead to the loss of habitat for many species. Rainfall in greater amounts will lead to increased soil erosion and will change existing stream dynamics (Defenders of Wildlife 2009). Some aquatic species may not be able to cope with faster streams of water and thus be forced to relocate to other habitats, if any are available. Severe soil erosion may cause a habitat to no longer be hospitable to plant species that once lived there. Other areas will likely experience increased drought, also affecting the growth of native plant species (Defenders of Wildlife 2009). Habitat loss is a major contributor to the extinction of species and is likely to happen through climate change.

Many habitats are expected to transform because of climate change. Warming temperatures in North Carolina are likely to cause spruce-fir forests to move to higher latitudes or northward (Defenders of Wildlife 2009). This could potentially remove the entire ecosystem from North Carolina, which is important for several species of birds that may be endemic to the mountainous areas of this region. Removal of a specialized habitat means removal of many species that rely on that habitat. Populations that live in elevated regions of North Carolina, such as amphibians, reptiles, and fish that live in cold water, will be affected most by increasing temperatures (Defenders of Wildlife 2009). Some amphibian species that live in the mountains of North Carolina are already experiencing plummeting population numbers. *Plethodon* salamanders have been experiencing population declines for the last thirty years (Caruso and Lips 2013). In an effort to determine the cause of these declines, researchers sampled 665 amphibians in the Great Smoky Mountains National Park (Caruso and Lips 2013). It is important to determine the reason for these population declines so conservationists can best determine how to protect the species from extinction. They compared their samples with that from a database of *Plethodon* species collected forty years prior and archived in the United States National Museum. They concluded that disease and climate change were possible causes for the decreasing populations of six *Plethodon* salamanders, three of which are endemic to the Great Smoky Mountains National Park and nearby areas (Caruso and Lips 2013).

### Government Regulations

North Carolina's government has recognized the potential impacts of climate change on North Carolina residents and wildlife. There have been some efforts to reduce climate change as well as prepare for the potential effects of climate change on North Carolina's species. North Carolina's Wildlife Resources Commission has revised its Wildlife Action Plan in consideration of the impacts climate change could have on North Carolina wildlife and ecosystems (Defenders of Wildlife 2009). The commission recognizes that deliberate planning with input from many sectors will be needed to effectively protect North Carolina's fish and wildlife. Special emphasis on those habitats and species most susceptible to the climate change and efficient implementation of protections will be needed (Defenders of Wildlife 2009).

The North Carolina Climate Change Interagency Council was established by North Carolina's governor, Roy Cooper, in an effort to consider the effects of global climate change and to move towards cleaner energy in North Carolina (North Carolina Environmental Quality 2018). This council is tasked with implementing plans that will allow North Carolina to become a leader in green energy. A member of each cabinet office serves on this council to ensure a collaboration in which differing aspects of North Carolina's citizens are considered

### Public Opinion of NC Residents on Climate Change

North Carolina residents have strong opinions about climate change. Eighty-three percent of voters in North Carolina believe it is likely that climate change will negatively affect areas along the coast in North Carolina over the next 50 years (Murawski 2018). Intense hurricanes in the past several years have had a role in changing residents' perception of climate change and what it may do their state. There are also some organizations, such as NC WARN, which inform residents about climate change and its potential effects on North Carolina. NC WARN is a non-profit organization that is working to sway Duke Energy of North Carolina to hop on the clean energy bandwagon (NC WARN 2019). NC WARN expects Duke Energy, a major energy supplier in North Carolina, to do its part to combat climate change by investing in renewable forms of clean energy for North Carolina's residents.

The perceptions of local officials about climate change are also important in order to determine where North Carolina stands on climate change. Action by local leaders to address the challenges of climate change is of the utmost importance given the impending effects of climate change (Bulla et al. 2017). Coastal communities in North Carolina have heightened concern when considering what effects climate change may have on the area, especially in the wake of the intense tropical storms that North Carolina is increasingly facing. In the next 30 years, North Carolina is expected to have sea level rise of at least two inches (Bulla et al. 2017). North Carolina has 484 kilometers of coastline and over 5000 kilometers of waterfront property, when including rivers and other freshwater systems. The people who can implement new solutions to tackle climate change are local officials (Bulla et al. 2017). Researchers found that there is a strong correlation between a local official's ideas of the threat of climate change on their community and how willing they are to take action to compensate for the effects of climate change. If a local official perceives climate change as a threat, then he or she will be eager to dedicate resources so that adaptive action can take place (Bulla et al. 2017).

### Future of Climate Change in North Carolina

The future in the face of climate change looks grim. The buildup of greenhouse gases in our atmosphere has been significantly increasing over decades, and the removal of these gases will not be a fast, easy, or cheap process. Even if it were a possibility to stop all greenhouse gas emissions today, the effects of climate change would persist well into the future, affecting people as well as wildlife (Defenders of Wildlife 2009). Many years of accumulating these gasses set climate change in place and it will take many years of dedication to reestablish the equation that humans have so awfully unbalanced. However, this doesn't mean that people and governments shouldn't try to combat these effects. Efforts will be needed on a global scale to effectively reverse these effects, but each state or nation can do their own part to help combat the effects of climate change.

North Carolina is making some headway to move towards green energy to replace the burning of fossil fuels as an energy source. North Carolina, being a leader in solar energy in the United States, is also making other attempts to diversify its renewable energy portfolio (Debbage and Kidd 2011). Science, innovation, and investment have secured North Carolina's spot as a leader among the states for renewable energy. Solar energy has provided North Carolina with efficient energy production that is drastically better for the environment as compared to burning fossil fuels (Debbage and Kidd 2011). However, there is much more that North Carolina can do to fight climate change, such as impose stricter emission restrictions for automobiles or impose a carbon tax on companies that are responsible for much of the burning of fossil fuels in this state.

Other positive efforts are underway in North Carolina to restore habitats and combat climate change simultaneously. The North Carolina Coastal Federation is working with a plethora of partners to restore over 5000 acres of historic wetlands (Miller 2012). This land had been previously ditched for drainage to use for agricultural purposes. These wetlands were previously home to many species such as several varieties of waterfowl, river otters, red wolves, American alligators, and red-cockaded woodpeckers, and these species may return to these areas with continued

restoration. The goal of these projects is to reestablish wetlands, which capture and clean the water of surrounding areas. Restoring wetlands will also promote healthy habitats for oysters, who in turn filter the seawater, improving its quality. This restoration may also have positive effects for climate change. The plants found in salt marshes act as some of the best carbon sinks, which capture and store carbon from the atmosphere (Miller 2012). The North Carolina Coastal Federation, along with its partners at Duke University and North Carolina State University, is working to measure the uptake of carbon dioxide by these plants to gain more evidence for the benefits of salt marsh restoration.

### Conclusion

Climate change has the potential to have many detrimental effects on the native species of plants and animals in North Carolina. The public is becoming more aware of the effects of climate change, and this will hopefully translate into powerful action by legislators to enact bills to reduce North Carolina's contribution to climate change as well as protect native species of wildlife that are most at risk to the whims of climate change. Even though some of the impacts of climate change seem irreversible, there is still much hope that with intensive planning, the effects can be limited and North Carolina can prepare for the challenges it is likely to face. 🌍

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