

Like many individuals who pursue an educational career in meteorology, a weather-related incident is what first attracted me to this field of study. Little did I know that a tornado during fifth grade would drive my future research to focus on injury prevention and weather communication. This severe weather event caused me to question the laws of nature and to seek a better understanding of nature's mysterious forces. From that point forward, I became enamored with weather processes and, throughout high school, I knew I was going to pursue an undergraduate degree in atmospheric sciences.

During my junior year of college, I encountered class scheduling conflicts giving me the opportunity to stay an extra year at the University of Georgia. Serendipitously, this minor change in my life plan led me to unearth my true passion. Psychology has always been an interest of mine; however, due to the rigorous atmospheric sciences program I would not normally have had time to invest in this degree. With more time on my hands, I was able to delve into the social sciences and begin to apply this knowledge to my background in meteorology.

Upon investigating the combination of psychology and atmospheric sciences, my search did not return many results. Nevertheless, with the help of a psychology professor, I learned about the research of Dr. Alan Stewart at the University of Georgia. Dr. Stewart's research exposed me to the Societal Impacts Program (SIP) at the National Center for Atmospheric Research (NCAR), and I was sold. The research they were performing posed some of the very questions I had been asking myself (interpretations of the warning system, effectively communicating hurricane evacuations, etc). This discovery crystallized my intentions of becoming a societal impacts researcher.

I was shocked that the issues involving the impact of weather on society did not have a plethora of active research. Without more information on this topic, we lack appropriate ways to communicate weather-related risks to the public in the future. Many scientists in our field continuously research and understand the disastrous effects of nature; however, communicating this information is not effectively executed. Upon this realization, I decided I want to impact society by overcoming communication barriers and clearly explaining the risk of various weather phenomena to the public.

As I set out on my interdisciplinary journey, I knew it was going to be a difficult path because of the uniqueness of integrating the social sciences and meteorology. Prior to graduating from the University of Georgia, I attended the National Conference of the American Meteorological Society (AMS), where my major professor gave an interesting presentation on child hyperthermia. I was enthralled with the research, and during that experience, I questioned why this information was not being used to support campaigns against children being forgotten in hot vehicles. When I received my graduate school acceptance letter from the University of Georgia, I knew his expertise would be invaluable in effectively communicating this risk to the public.

Past Research Experience:

Many individuals do not understand various weather concepts – this is why research that explores effective weather communication is needed in our current society. Prior to the summer of 2013, my undergraduate advisor approached me with the idea of combining social science and atmospheric science into a summer research course. The summer class involved a collaborative project investigating the meteorological community's perception of the probability of precipitation (PoP), or more easily defined as the chance of rain. As a project lead, this experience allowed me to gain an understanding of the leadership that is required to manage a research project. The concept of PoP has been misunderstood by the public for years, but we lack

information about the source of this miscommunication. I suggested that we research the meteorological community's perspective of the PoP because, if the public has a misconception of its meaning, it more than likely stemmed from a communication error in the community. Working on this project allowed me to gain research experience in using both qualitative and quantitative research techniques to gather data. Prior to conducting the quantitative interviews, I assisted Dr. Stewart and learned about the International Review Board (IRB) process. This knowledge, in addition to the Human Subjects Training that I completed with the IRB, will be invaluable when moving forward throughout my research career. This project also gave me the opportunity of understanding the confessional aspect of research and how to properly conduct an oral presentation.

After gathering data throughout the summer, we constructed a presentation to discuss at the National AMS Conference in Atlanta in February of 2014. Dr. Stewart and I co-presented an oral presentation at the conference. Since the summer of 2014, Dr. Stewart and I have been writing the manuscript which we hope will be published in the coming months. After determining that many meteorologists have varying definitions of the probability of precipitation, it is our hope that meteorologists throughout the country will realize the importance of communicating weather information and the potential impact it could have on the public's understanding of this meteorological concept.

In the fall of 2013, I began another collaborative research project which examined the geographically diverse climates across the United States with the goal of developing regional heat-safety guidelines. Athletic organizations, around the country utilize a single set of heat safety guidelines, which is not optimal due to the varying climate regions. After discovering these noticeable patterns across the United States, I further investigated the impact wet-bulb globe temperatures (WBGT) would have on athletes across the country. I realized that we needed to create a table communicating the different categories that distinguish between the varying climates in the United States. After our initial analysis of the WBGT temperature data, we presented our findings in poster format at the Southeastern Division of the American Association of Geographers (SEDAAG) and the National AMS Conference in Atlanta. In Atlanta, I received third place in the AMS Weather Ready Nation poster competition. During the fall of 2014, I constructed the figures and helped with the editing process of the manuscript. The manuscript has been accepted and will be published in the upcoming months. The next step of this project consists of traveling throughout the semester to give oral presentations at the International Congress of Biometeorology conference and the Applied Geography Conference. In the spring of 2015, I will also be traveling to Phoenix, AZ to present on this topic at the National AMS Conference. My goal is to clearly communicate the topic of heat safety to coaches and other sports staff, who are not experts in the field of meteorology. It is our hope that this information can be used to alter the policy affecting appropriate regional practice temperatures across the contiguous United States. With several states in the process of adopting heat safety guidelines, I believe this information will aid in the decision-making process and prevent future injury in athletes.

Intellectual Merit:

During my college career, I pursued a Bachelor of Science degree in both geography and psychology, with an emphasis in the atmospheric sciences. I knew during most of my undergraduate studies that I wanted to combine these subjects in hopes of impacting human decision-making and behavior, when it comes to understanding weather information. When I initially attempted to integrate geography and psychology, I was met with the challenge and the

opportunity to pursue research combining these two disciplines. With the guidance of many professors in my department, I was able to start carving out a career that fit my core research interests. By linking these different disciplines, it gives me a novel outlook that can aid physical scientists in effectively communicating their research and knowledge to the public. Using my strong background in both fields, and my continued graduate education in various other disciplines, I believe that I am the person to bring a sophisticated social science approach to a meteorological project.

As an undergraduate, I received several scholarships that aided in my pursuit of bridging the gap between the social sciences and meteorology. AMS awarded me two prestigious scholarships, the AMS Named Scholarship and an AMS Fellowship. The AMS Named Scholarship was awarded to me in 2013, and covered my travel expenses to attend the National AMS Conference in Atlanta, GA in early 2014. This experience taught me about the amazing research currently occurring in the meteorological field, but also gave me the chance to interact with individuals also working toward introducing social science techniques to this field. During the summer of 2014, I was notified that I would be receiving a National AMS Fellowship to fund my first year of graduate school. This was a prestigious honor, with only ten individuals receiving this award annually. This research fellowship was funded by the AMS 21st Century Campaign, which strives to employ remarkable scientific advances and the betterment of society. This fellowship not only supports me during my current research, but allows me the unique opportunity to present at conferences around the country.

Broader Impacts:

During my undergraduate career, I also took part in many activities that promote weather safety practices in and around our community. Since my main research interests involve the communication of weather information, it was important for me to inform the public about weather safety practices. While on the officer board of The University of Georgia's local chapter of AMS, we frequented schools in the Athens-Clarke County school system in order to teach weather related topics and safety to a wide range of school children. It is our hope that these students will teach their family about weather safety and create a plan that could potentially save their lives during a severe weather outbreak.

Throughout my undergraduate studies, I participated in several advising and teaching activities which allowed me to positively influence many individuals. The most impactful experience was becoming a peer advisor to three different groups of freshmen. I was a strong academic influence, who helped make the transition into a college setting slightly less intimidating. In my final year, I created a new group that focused on combining the disciplines of climate and athletics. This opportunity allowed me to help the community through a service learning project, as well as enjoy the interdisciplinary approach of introducing and working with individuals from different majors.

I believe that my research focuses, effective weather communication and injury prevention, are essential toward positively impacting our community and the way we discuss weather safety. My vision for the future is to continue my meteorological research, involving the successful integration of social science practices, through the doctoral level. After receiving my degree, I want to pursue a research or policy position where I can apply my knowledge for the benefit of society. I hope that my contributions to this scientific area will act as a stepping stone in proving that this interdisciplinary approach is essential to the future of this field and in altering policy. If we gain the skills to effectively communicate our cutting edge research in simplistic terms, our discipline can be more applicable to the masses.