**Samantha Fons: Chuck Bennett, Teacher at Chestatee Academy**

Unlike most HMP students, my mentorship began the summer before my senior year. Martha Zoller, former US House of Representatives candidate and current radio host, needed someone to fill in for an intern. Through this connection I began familiar with her website as I updated information and articles. Later, she asked if I would be interested in writing for her. Although zpolitics.com is a conservative news site, I was able to write about both republican and democratic politicians, as well as various events throughout the state. My eyes were opened to the world of online journalism, a career that I had never considered before. It helped me to realize that I want writing to be a part of my career in business.

Later during the school year I was paired with Chuck Bennett at Chestatee Academy. He was responsible for creating a new website for the middle school a few years ago. The site is expansive and I knew he could walk me through the process of creating a website. Mr. Bennett has explained to me that the school website doesn’t just serve as an information hub, but also a marketing tool for families that have school aged children. First I began by making a formal presentation of improvements that needed to be made to the website. In this way, I was marketing myself. Next I updated the website’s dead links, outdated information, and old pictures. I began a student, teacher, and school success page that ultimately failed. Finally, I began a new website that would be mobile friendly and easy on the eyes. While I never had a set project in mind, I have been able to learn from my successes and failures in website design, internet marketing, and online journalism.

**Morgan Helton: Lyndrid Patterson, Teacher at The DaVinci Academy**

Almost everyone can agree that becoming educated is important, but how does our society create distinctions between who is educated and who isn't? Most importantly what does it mean to be educated and what qualities do educated people possess? It’s an important question to answer because if students don't understand why education is important then how can they apply themselves to learning? I conducted a survey asking middle school students at DaVinci Academy questions about what they felt being educated meant and what traits that they thought educated people had. From the results most students felt that being educated meant more than having a degree and a job. Most felt that it was a combination of traditional education and other traits such as good communication skills. Of course the definition of educated can vary from person to person, but my survey proves that even in middle school, kids recognize that just obtaining a degree or having a good job does not prove a person is educated. This is important because as students prepare for high school and college they need to keep in mind all the factors that define educated people and try to encompass as many as possible to become a well-rounded, educated adult.

**JD Holloway: Andy Crozier, Network Administrator at Hall County M.I.S**

My project revolves around why computer engineers are important in everybody’s life. This question was formulated because I am going to study computer engineering, and I know many people do not know what this type of work includes and what inventions that have been created. I felt that explaining that computer engineers are responsible for many things that people use on a daily basis was important. When I began my research, I started looking at what the definition of an engineer is. I found that engineers are creative and they are problem-solvers who rely on discovery to improve the world in which we live. From this I applied it to computer engineers, meaning they are people who identify a problem or need in life dealing with electronics and work tirelessly to create a solution. These solutions involve many things. Coding, communications and wireless networks, compilers and operating systems, computational science and engineering, computer networks, mobile computing, and distributed systems, computer systems architecture, computer vision and robotics, embedded systems, integrated circuits, VLSI design, testing and CAD, signal, image and speech processing would name a few. It shows that they don’t just design computers. They mainly deal with hardware components (ex. mother boards) and some with software (ex. Microsoft Word). They design circuits for airplanes that allow them to fly and they also are the reason for your cell phone. The work of a computer engineer is almost limitless. They deal with anything electronics wise, and everything these days has some type of electronics associated with it.

**MaryClare Patterson: Kim Snider, Physical Therapist at The Rehabilitation Institute-Sherwood** According to the American Academy of Orthopedic Surgeons, between the years of 1998 and 2004, over 5 million people visited a physician with symptoms of a rotator cuff injury. Many of these cases could have easily been avoided by simple exercises and stretches. My essential question was "How can I modify my lifestyle to prevent a rotator cuff injury or tear later in life?" In my mentorship, I saw many patients who had rotator cuff injuries, and most of these patients were recovering from rotator cuff surgeries. For most patients, there was not one specific incident that caused their injury, it occurred over time with the wear and tear of their jobs, sports, or daily activities. If these patients had taken 10-20 minutes a day to strengthen and stretch the muscles and tendons involved in their shoulders, they could have potentially saved themselves about $20,000 and 6 months to a year of physical therapy and recovery. My goal with this project is to educate people on how easy it is to prevent rotator cuff injuries. A few minutes of stretching and strengthening a day is a pretty good tradeoff in comparison to a two hour surgery plus 6-12 months of recovery and intense physical therapy.

**Hunter McGhee: Congressman Doug Collins in the Local Congressional Office**

My purpose in this project was to find out how congressmen stay connected to their local constituents, and I will know be able to apply the vast array of knowledge I have gained through this, to my future political career. My results conclude that those congressmen that are extremely connected to their district are more likely to be successful in Congress. These highly successful congressmen utilize all forms of social media such as Instagram, emails, and mailing lists in order to create a personal relationship between the congressman and each individual constituent. However, while a close personal relationship is crucial, in some cases the congressman needs an overview of problems that are happening throughout a community, a county, or even his district as a whole. In order to be able to look at the “big picture” of a problem effecting their district quickly and efficiently, many congressional offices have started using something called a “district database” which over the course of this year, I have created. This allows the congressman an easily accessible outline on the leadership throughout his community. When the congressman has the opportunity to connect with elected officials throughout the communities which he represents, he can gain knowledge on the state of the community and better benefit those that he serves. In conclusion, congressmen employ many various techniques and tools in an attempt to connect to most of his constituents on a personal level. Many aspects, such as social media and community appearances, help him easily communicate to those in his district. I will apply this to my future political career in an attempt to secure success and obtain a close relationship with those I hope to represent.

**Morgan Ivey: Melissa Miller, Center Manager at Open MRI and Imaging of Gainesville**

Radiology is an ever changing field. Those hoping to be or those already in the field must stay up to date on new technological advances to keep up with their jobs. New technology makes diagnosing and treating patients more accurate and efficient. Many of the scans that radiologists read and perform have already improved drastically from the past and are continuing to change today. New advances have made radiology safer for patients. New advances have also allowed doctors to diagnose and treat patients faster than ever. In the future, images will be more detailed than ever. The systems and machines are only going to get better with time, thus giving doctors an advantage when treating patients. By going into radiology, like any other medical career, one must always keep the patient’s best interests in mind. One must look forward to learning a new way of doing things that will help the patient resolve their issues faster and more efficiently. A true radiologist will accept and push for new advances that will perfect the art of imaging, thus perfecting the art of healing.

**Joey Scheman: Craig Smith, Co-Owner and CPA at Smith and Bennett PC, CPA'S**

The purpose of my Honors mentorship is to provide me with hands on research into the life of a certified public accountant and business owner. This noteworthy experience that I will take away with me, offers a true perception about a career I am considering pursuing in my future. In addition, this allows me to understand and decide as to which direction I plan to take while choosing my college pathway; resulting in laying the foundation that will put me one step ahead in the real world. My mentor, whom I currently spend up to eight hours a week with, guides and directs me as to what it takes to become a very successful certified public accountant and business owner. From this experience, I will be better prepared and excited to take on this global, ever changing, competitive economy.

**Allison Walls: R. Brett Barger, MD, OB/GYN at The Longstreet Clinic’s Center for Women’s Health**

My year in the Honors Mentorship Program has been nothing short of exciting. I have learned, under the direction of Dr. R. Brett Barger, MD, how to perform a variety of tasks around the office. I have viewed cultures under the microscope, located a baby’s heartbeat by using a fetal heart tone monitor, assisted in the implantation and removal of several birth control methods and observed many ultrasounds. As a result of my internship, I am even more excited than ever about pursuing a career as an Obstetrician. One thing that touched my heart while I was in the office was learning about different types of birth defects and how to prevent them. The more a woman knows about pregnancy and how to take care of her body, the healthier she and her baby will be. One question came to mind as I was researching. “How does the percentage of infants born with preventable birth defects at Northeast Georgia Medical Center compare to the national average and what can I, as a future OB/GYN, due to lower this percentage?” I learned that many birth defects, especially ones involving the brain of the baby, can be prevented by having a woman take a folic acid supplement while pregnant. By focusing on prevention, I hope to decrease the number of birth defects in infants born at Northeast Georgia Medical Center. I have shared my findings with both my mentor and classes at my high school, and organized a website to help spread information.

**Xenia S. Chon: Amy Hansen, Teacher at Flowery Branch High School**My research involved the flaws in the America education system and methods to relieve these maladies. I researched the negative effects of standardized testing, which neglects to take into account the individual student merits and fails to take into account personal factors. Also, the structure of the curriculum is non-inclusive to most variables and with the competitive nature of worldwide education America is found lacking. Hopefully, a restructuring move for the system could heighten the quality and efficiency of future education.

**Erica Embry: Mike Embry, Owner at Vanquish Property Partners**

How does the field of real estate contrast throughout the world? Before I started my research I thought I knew quite a lot about the development/real estate world because my dad is a developer and I had grown up around it, but I was so wrong. My research has further proved me wrong. The aspects that go into development such as site plans, density, finding the land, and further researching if a deal will even work there were the hardest things to grasp.

**Taylor Kay: Sheila Evans & Brenda McMillian at The Longstreet Clinic & Lake Lanier Islands Development Authority**

My project centers on the issue of childhood obesity, and examines it from many different perspectives. Not only does it cover both short-term and long-term effects of childhood obesity, but it also looks at current efforts to reduce the epidemic and attempts to propose an “ideal plan” to best diminish the far-reaching spread of childhood obesity. The physical effects of childhood range from higher blood pressure to increased chance of heart disease, ranging from relatively trivial to nearly fatal. However, the negative impact of childhood obesity does not end with just physiological effects; instead, it also affects both social and psychological health, since obese children are often ostracized and have fewer positive relationships, which can lead to low self-esteem and, in some cases, mental disorders. Since the problem is so widespread and dangerous, both the government and private organizations are working to help reduce the negative impact of childhood obesity. However, it is clear that present efforts just are not enough to make an impact. In order to finally reduce this growing epidemic, governments, organizations, schools, and parents all need to prevent a unified front, one that focuses on the total well-being of the child rather than just weight, which will create a long-term positive change, because having healthier children both inside and out is exactly the way to reverse the obesity epidemic.

**Stephanie Jarrett: Ron Betteker, DVM at Chateau Animal Hospital**

Why do we study the oceans and its marine life? The purpose of this research is to further my knowledge in the field of Marine Biology. I chose this field initially because I love Dolphins, but I have since learned there is so much more to it. This research helped me understand that the scope of Marine Biology expands to include studying the earth’s oceans to gain a better understanding of our world. This research also examines why we study the oceans and its marine life and also shows examples indicating that we have only scratched the surface. Less than 5% of the oceans have been studied, but what we have learned in that 5% reveals new insights to the entire planet (both ocean and land). By examining this essential question, I learned how studying the oceans can help us understand the world we live in.

**Alden Jackson: April Young, Medical Laboratory Scientist at Aeon Clinical Laboratories**

Throughout my year in the Honors Mentorship Program, I have experienced great times along with eye opening realizations. My Essential Question is “How can I integrate what I am learning with my future goals to help and support people?”

I have discovered how much microbiology/histology means to the human race, as well as the fact that what I am doing is really benefitting people, which is a truly amazing feeling. It is crazy how these microscopic observations of the human body can lead to not only bettering the person, but bettering the human race overall, with new breakthroughs being made every day. Microbiology is phenomenal in every way, shape, and form. If I continue on this path, there is no telling what I could end up uncovering later on in my life. What if I was the one to make the next astonishing discovery? This could **really** lead to something amazing.

**Emily Haag: Amanda Fernandez, Victim Advocate at Hall County Solicitor's Office**

When I began researching my original E.Q., which was just about how my mentorship fit into the court system, I found the answer to the question relatively easily. The court cases almost always go through the same process, with only a few exceptions. After finding this answer, I began to see how what I do in the Solicitor’s Office ties in with the court process clearly, but I felt like there was insufficient information to do an entire project just based on this. However, I soon found myself interested in a different yet interrelated topic. Since my mentor is a victim advocate, I had dealt with a couple of domestic violence cases before but had never really thought anything of it. This changed, however, when I began researching the different cases that passed through my hands. Slowly I realized how much I sympathized with these victims, and I discovered that I wanted to learn how to help them. I realized that the perfect way to do this would be to incorporate my domestic violence research into my final project. Not only would my project be about the court system, but it would also be about the people in the court system- a sort of domestic violence awareness presentation as well as my original project. I researched new questions then, with topics like the indicators of future domestic violence. My project now will include the original answer to my E.Q., the answer to the new E.Q., and research based on my domestic violence inquiry. Now I have information on multiple aspects of the law system- knowledge which will undoubtedly come in handy if I choose to study law in the future.

**Madison Eiberger: Kristen Basinger, Physical Therapist at Gainesville Physical Therapy**

What is a FOOSH and how does it affect other parts of the body like the wrist, elbow, and shoulder? FOOSH is an acronym for FALL ON an OUT STREACHED HAND. When you fall, it’s a natural human reaction to stick your hand out to try and catch yourself. When you do that your hand, wrist, elbow, and shoulder take the full impact and absorb some of the shock from the fall. When someone suffers a FOOSH sometimes bones can break. The bone that is usually broken is called the radius. The end toward the wrist is called the distal end. The medical term for "broken bone" is fracture. Therefore, the medical term for the most common type of "broken wrist" is a distal radius fracture. The humerus of the upper arm and the paired radius and ulna of the forearm meet to form the elbow joint, a hinge joint in the upper arm.

Injuries to the elbow are common and often accompanied by injury to shoulder or wrist joints. It is important to assess injuries promptly and accurately taking into account age and the mechanism of injury, particularly because of the risk of accompanying vascular involvement. A FOOSH can affect other parts of the body and takes a while to rehabilitate, the exact time depends on the condition of the patient and if they are doing their exercises or not.

**Tyler Shows: Janet Webb, Athletic Trainer at North Hall High School**

For my mentorship this year I mentored with the Athletic Trainer that works with the sports teams at North Hall High School which is also the school where I am a senior. Before joining the Honors Mentorship Program my goal was to go to college solely to become a Physical Therapist and for my undergraduate degree I was going to get a Pre-Physical Therapy degree. For my mentorship, I was not the only student there learning from my mentor. There has been four students from the University of North Georgia in the Athletic Training program there shadowing my mentor as well. When I first began my mentorship I just watched to get the hang of how things worked and how to do certain things. Now I can do the majority of what my mentor can when it comes to taping, wrapping, rehabbing, and helping athletes recover. During my mentorship I have worked with many student athletes that have suffered concussions from several different sports. I did not know that much about concussions and that is why I chose to do my final project on concussions. The website I designed is informative in that it has basic information on concussions and the part that I made my own so to speak is my ideas on the prevention of concussions in a variety of sports. Some of the ideas include my elaboration on ideas that I’ve heard and also ideas that I have thought about on my own. I will present to my peers that either participate in sports now or might join in college so that they can think about the ideas I present to them when they’re playing to keep themselves safe. I have decided to change my goal of getting my ungraduated degree in Pre-Physical Therapy to Athletic Training and will be attending UGA to make this goal a reality. I will then go on to get my Physical Therapy degree afterwards. My mentorship this year has left me excited to see what the future holds in my journey to reaching my goal of being an Athletic Trainer/Physical Therapist.

**Angelena Velaj: Janet Velaj, Ultrasonographer at NE Georgia Diagnostic Clinic**

This research is about movie sales and movie genres that make it big in the generation we live in today. I have had to take into consideration more factors than just box office sales while gathering all of my data. I had to go deeper into movie sales and profits. Some factors that need to be examined are DVD sales, iTunes sales, red-box sellouts and etc. From the top twenty Grossing Movie Incomes throughout recent years more than half have been Action/Adventure that gains the most profit. Ages from eighteen through fifty enjoy these types of movies, with some outliers here and there. The reason for this is because Action/Adventure takes people into a different world and lets them escape to a world far less boring than theirs.

**Lesley Cruz: Troy Patton, Director of Occupational Medicine at Guilford Immediate Care – Oakwood**

The aim of the study was to investigate if physician gender has an influence on the satisfaction of the patients. The method used was surveys to patients immediately coming out of their doctor appointment. The participants were chosen out of convenience from patients that would come into the clinic where I mentored. The study’s results proved that gender does not have much influence on patient’s satisfaction. In conclusion patient satisfaction is influenced more by the personality of the physician and if the goal of the patient is met. To exemplify this Michael J. Fox proclaimed, “You’ve probably read in People that I'm a nice guy - but when the doctor first told me I had Parkinson's, I wanted to kill him.”

**Alexandra Taggart: Barbara Steinhaus, PhD, Chair of the Music Department and Professor of Music. (I work closely with all four faculty members, Priscilla Jefcoat, PhD, is an associate professor, and Bobby Ivey and Ben Leaptrott are assistant professors) at Brenau University**

“Why should music education be prioritized in schools, and how can we, as students, benefit from learning music?” As a student dedicated to the study and advancement of music education, this is a question that I have explored this year through my mentorship. To support my observations and discoveries, I used research from online articles and music professors.

 To gain a better understanding of all aspects of my question, I broke the question into three main parts. First, I wanted to understand the different types of skills that are learned through music classes as opposed to other academic courses. Discovering the benefits and effects of music on people was my second area of study. Discipline and teamwork are crucial to music education; these skills stay with music students as they go into the workplace and help them become better workers. My last area of research focused on the effects of economic cutbacks on music education and what teachers are doing to counteract these challenges and make a difference in the lives of their students. Cutting the arts programs in schools hurts students in the long run. Without the opportunity to learn music, students will never grasp the skills gained by studying music including patience and cooperation.

 Through research, I have become more convinced that music education must be promoted in all levels of schooling because of the lifelong benefits and skills that music students can gain. Music allows students to develop onto higher mental and emotional levels that help them succeed throughout their lives. I plan to continue studying music as I move on to higher education and advocating for the advancement of music education for students of all ages.

**Alexa Starr: Lee Watkins, Physical Therapist at North Georgia Medical Center Rehabilitation Institute**

This website discusses the types, purpose, and use of different physical therapy electrical stimulation methods.  Electrical stimulation can be used to decrease pain and inflammation, improve circulation, decrease swelling, reduce muscle spasms, and help muscles contract properly. The methods evaluated on this site are Interferential Current, Russian, Pre-modulated, and High Voltage.  How each type works is explained along with how they are used to help with specific injuries.  The website describes and explains the reasoning a clinician may use to select one type over another. For example, Russian stimulation is used to improve muscle contraction. This would be ideal for people who have just had a knee replacement because the unused muscles in the leg become weak and need help rebuilding strength. Scenarios like this are evaluated for the other types of electrical stimulation as well. There is also a collection of random facts about electrical stimulation and interviews discussing the effectiveness of this therapy. Many therapists advocate for electrical stimulation and use it frequently to aid patient’s injuries.

**Erin Thomas: Larry Cook, Associate Professor of Theatre at The University of North Georgia, Gainesville Campus**

The purpose of my research was to find detailed information on, as well as experience, the normal routine of being in the art department, more specifically, scene design, of the film or theatre industry. I found great examples of what tasks scenic designers, as well as some other branches of the art department, are responsible for in the making of a film/play by reading interviews, design books, watching videos, and working with my mentor. The final product I made as a result of the research is a model of the set I helped create. I was given the final, to-scale drawings of the set, then painted and assembled them to look like what the real stage should. Upon completing this research and mentorship, I have found that an art career in the film industry is definitely still an option, and the knowledge I have gained will help me decide which job is best for me.

**Kennedy Crocker: Allie Pohlmeier, Girl's Minister at Lakewood Baptist Church**

This project focuses on mission trips, from the preparation to during the mission, and the aftermath of the mission trip. Everything from what to pack and physical preparation to emotional and spiritual preparation is discussed. Every person is called to be a missionary; it does not matter where, yet most people assume you have to go on a trip to do so. This project lays all information about a mission out clearly so that all questions can be answered. Videos, in-person interviews, articles, and personal experience were used to collect the data for this project.

**Christopher Olmstead: Paul Kyst, Director of Maintenance at Lanier Flight Center**

Since September 2012, the people at the Lanier Flight Center in Gainesville have welcomed me with open arms. They see that, eventually, the younger generations will have to take on the aviation legacy as the older generations move on. I felt as if I was in my second home. I was surrounded by aircraft and highly intelligent individuals who shared the same passion I did for aviation. My time at the Lanier Flight Center was definitely worthwhile and an outstanding experience for me.

While I interned at the Lanier Flight Center, I worked mainly with Paul Kyst, the head of maintenance at the flight center. Paul is a very unique individual with a passion for aviation and a very impressive résumé. Paul is not only in charge of the aircraft maintenance at the flight center, but he is a Captain for American Airlines. In addition to Paul, David Wardlaw and John Owens helped me along the way when Paul was busy. David and John are both great guys to talk to, and provide me with inspiration to reach toward the goals I’ve set before me in life.

This year, I developed my essential question to put emphasis on just how important aircraft mechanics are in the aviation industry. The FAA has set standards and regulations on how mechanics are to perform maintenance and inspections on aircraft. Aircraft mechanics are mandates to adhere to the federal regulations to make sure maintenance is carried out to ensure the safe operation of the aircraft. When maintenance is not performed to the standards, lives are put at risk and the unimaginable can happen.

**Fernanda Arcaraz: Kathy Mellette, Earhart-Edison Exploration Academy Co-Coordinator and Enrichment Specialist & Michele Hood, Innovation and Learning Specialist at North Hall Middle School**

I am a senior at Chestatee High School, and this year I mentored with the Earhart-Edison Exploration Academy (E2) at North Hall Middle School for Marketing. Last year I got to be a part of the Honors Mentorship Program to mentor in International Affairs. Because I am certain that is the career field I want to pursue, I branched out this year and explored a complimentary field, Marketing. I want to get a minor in Marketing; therefore, I knew that a mentorship with E2 would serve as an experience to get to know the field better. I mentored with teachers that I previously knew: Kathy Mellette and Michele Hood. I worked my way up to acquiring the title of Marketing Director for E2 and took care of any tasks related to Marketing. I successfully demonstrated to the E2 teachers how necessary it is to have at least one teacher with a sufficient amount of knowledge in Marketing so they know which ways are best to advertise their new academy to the public. Because E2 started this school year, I had the large task of making sure prospective students and their parents had enough information about the Earhart-Edison Exploration Academy and its events during the year. My project, which I presented to the E2 teachers, is an informational website with all sorts of Marketing tools/tips, and basically how to market a new organization. The teachers and public now have access to my website for future reference whenever doubt or ideas come to mind in terms of how to advertise. Because my website is not directed to one specific audience, anyone can use it with provided examples of E2 publications/strategies. I look forward to pursuing my minor in Marketing thanks to the amazing experience I had this year at my mentorship.

**Haley King: Christopher Conowal, Diane Toal, Heather Ausburn & Josh Welch**

**Lawyer and Legal Assistant at Conowal, Welch, Womack, LLP**

As a Lawyer, there are many tough decisions that have to be made all depending on what’s best for the client. There’s what to say, what to request, what types of things to file with courthouse, but one of the first decisions to be made is what type of trial to request. The two types of trials being a bench trial and a jury trial drastically vary in the approach the lawyer needs to take. Difference in language, appeals, the details stated, and questions ask are just a few of the things that might come into consideration when choosing what type of trial is going to have the best outcome for the client. Through research and reviewing different studies it’s been found which cases are most often jury trials and which ones are bench trials, what are popular appeals used in each, and the different approaches to take and when. The choice between standing in front of just a judge or a judge and a jury is a big one and the research I completed will help me in the future when I have to make this decision for clients of my own.

**Reece Rada: Wendy Smallwood, Teacher at Spout Springs Elementary School**

Since the eighth grade, I have known that my calling would be to impact the next generation. What better way to do so then to go into the field of teaching? This year, I decided to do my mentorship at Spout Springs Elementary School with the best first grade teacher there, Mrs. Wendy Smallwood. Throughout my time there, I have worked specifically with students, watching them grow academically every day. For my project, I decided to research how a teacher can impact a student’s life. I did so by looking into how to be an effective teacher, and looking into testimonials of people from all over the world who were impacted by their past teachers. I obtained this information through several different articles, and interviewing my mentor.

**Madison Smith: Brendon Blake, Physical Therapist at Back In the Game Physical Therapy**

During my work at a physical therapy office, I became troubled at the number of overweight patients coming for therapy. If only they lost 20, 30, or maybe 50 pounds, they would feel, move, and live better. Many people are simply ignorant to the negative effects of their unhealthy lifestyles, particularly concerning nutrition. The purpose of this research is to help understand the benefits of nutritious food and learn how they personally should eat to maximize their health so that people could spend less time and money on therapy. The contents of the research include an explanation of the three macronutrients, protein, carbs, and fat, which are essentially the three “types” of food we consume and the many micronutrients (vitamins and minerals) that our body needs to function at its full potential. Additionally, one learns to be aware of their daily calorie intake, as well as what percentage of calories each macronutrient fills. Daily calorie requirements and macronutrient percentages is dependent on your body type, activity level, and health goal. There are three distinct body types: ectomorph, mesomorph, and endomorph; and, for example, a highly active ectomorph would be guided to eat more carbohydrates then a highly active endomorph. This research includes a body type survey and calorie and macronutrient requirement calculators to help the audience utilize the information for their own benefit.

**Madisen Mayfield: Tim Tipton, Administrative Pastor at Chestnut Mountain Church**

Churches across America have started to discover the declining number in their pews each week, and now they are trying to develop plans to fill their churches again and to begin to grow in order to keep the Gospel known throughout the world. In order for churches to reach out to families so that the families will come to church, it is essential that churches exercise marketing strategies that have been utilized by flourishing business. Churches, both denominational and nondenominational, have one mission, which is to share the Gospel, and they have to deliver it in a way that is not comfortable to them but in a way that is appealing to the lost. Outreaching to the surrounding community is not executed in the same forms as it was two decades ago, but now it is executed by using modern forms of technology. Ways to market to a church’s community through technology would be conducted by implementing communication and advertising to the church’s demographic through multimedia systems like websites, social media, email, apps, etc. Through multiple studies, it has been found that churches that implement marketing and media within their congregation have increased their membership and attendance drastically compared to a church that does not implement these same strategies. By our society living in a highly technological world, how people find and interact with churches is constantly changing, but the message that the church is sharing and spreading is never changing. In order to fulfill the mission that Jesus has called His people, the church, out to achieve, spread the Gospel, churches have to market their ministry.

**Meganne Jackson: Julie Crites, NP-C Guilford Immediate Care – Oakwood**

As a senior at West Hall High School I decided to participate in the Honors Mentorship Program. I developed an internship at the Guilford Immediate Care office on Oakwood, Georgia. I was fortunate enough to spend a great deal of time with the clinic’s Nurse Practitioner. After dealing with a number of patients I began to realize a unique aspect about this clinic. Many of the patients seen in the office had little to no healthcare insurance. Little did I know that Guilford accepts many patients with no healthcare coverage whatsoever. This lead to my thesis, "Can Guilford Immediate Care provide the best care to low income and/or non-insured patients?"

 There are many citizens of the United States that have little to no healthcare insurance. It was reported, in the 2012 census, that forty-eight million Americans have absolutely no coverage. Many medical care providers will only accept select brands of insurance making it extremely difficult for patients to receive care. Many of the patients seen at Guilford are considered self-pay patients. This means the patient pays a small fee to be seen at the clinic due to their lack of insurance. The staff at Guilford can perform routine medical procedures and even treat urgent medical problems such as those typically seen in the emergency room.

 At Guilford Immediate Care office visits will cost a patient twenty to fifty dollars on average. The patients are seen in order of arrival, unless their needs are extremely urgent. Not only can a patient trust the skills of the staff at Guilford, they can rest assured that the care provided is affordable and they will be with equal importance. Guilford Immediate Care is a tremendously beneficial resource to the community due to their easy acceptance policy, affordable care, and their wide range of treatments.

**Austin Passmore: Betsy Brooksher, 7th Grade Math Teacher at Chestatee Academy**

There is more to being a teacher than just teaching. There are many aspects of being a teacher that people are not aware of when deciding on the career, such as managing a classroom, dealing with misbehavior, faculty meetings, and parent conferences. For teachers, the hardest and scariest year is the first year of teaching, and being prepared to control a classroom is the most important part of that first year. By training potential teachers about these extra responsibilities of a teacher, new teachers will be better prepared for their first and as a result, be more effective when teaching.

**Grace Brown: Dr. Forrest Harvey at Atlanta Rehabilitation**

Every four minutes, someone dies from a stroke in America. Strokes affect people across America constantly, and even if someone survives a stroke, they will be affected for the rest of their life, whether it is physically or psychologically. There are different types of strokes, like ischemic and hemorrhagic, but every stroke has completely different effects on its victim. Most stroke survivors suffer things like sleep problems, difficulty with speech, partial paralysis, and even psychological problems like depression. Stroke therapy and rehabilitation is a key part of recovery from a stroke. In order to recover, there are different types of therapy. The main therapy method is simply muscle memory therapy which focuses on repetition. Other kinds of therapy that are new and show good results in patients are mirror therapy and also music therapy. All can be beneficial to stroke survivors depending on the effects of the specific stroke. Overall, I chose to focus on stroke rehabilitation for my final project because I am interested in the human brain, and also physical therapy (which are both related to stroke therapy). This project has taught me so much, and it has inspired me to have an even greater interest in therapy and the human body.

**Caroline Catledge: Shiv Sachdeva, Assistant District Attorney at The Hall County District Attorney’s Office**

"Catch and release is for fish, not criminals."

In my mentorship I explored the prosecution side of criminal law. My essential question was, "What are the personal opinions of lawyers and the facts that support being on the prosecution side of law rather than the defense?"

To gather my research I interviewed my mentor, read law blogs online, read law school websites, and studied the behaviors of the lawyers during trials. Through my research I found that although there are facts that can back up the decision of being a prosecutor, the driving force behind the decision is emotion and the feeling of bringing justice to the victims of crimes. The common denominator of all prosecutors is the fight for justice, and the fight can be rewarding. This essential question and research helped me realize why being a prosecutor is a rewarding career. Through my mentorship I learned a lot about this career field and I will carry this knowledge with my through my life. I look forward to a future full of fighting for justice in this fulfilling career.

**Bethany Green: Charles Shadle, OTR/L, Academic Fieldwork Coordinator for the Center for Productive Living at Brenau University**
Strokes are the top cause of long-term disability and the fourth leading cause of death in the United States. Because this condition is so prevalent and possibly fatal, it is important to understand what a stroke is, how to treat a stroke, and most importantly, how to prevent a stroke. Up to eighty percent of strokes can be prevented. The more you know about strokes, the better chance you have to prevent one.

**Chris Marin: Heather B. Westmoreland, MD at Northeast Georgia Heart Center**

To what extent do technological improvements in cardiac surgery enhance the field and treatment of patients?

Technology leads to outstanding outcomes when it comes to the treatments of patients. Sometimes people question whether technology is capable of treating a human being since technology is not aware of the value of human life, even though technology is replacing older methods of providing adequate health care. The aim of this research is bolster the ideologies behind the usage of modern technology in the medical field.

In the research one is presented with various methods that come from the result of techno focal advancements in the treatment of the heart. These methods are ways of which heart surgery and diagnosis treatments are performed. Some of these methods include the recent DaVinci surgical robot, Transcatheter Aortic Valve Repair, and mitral valve repair. Despite the fact that some people argue that technology can make older methods of performing treatment obsolete, medical students of today and physicians of tomorrow are introduced to these technologies for practicing with in their desired field of medical treatment. New medical technologies also lead to an increase in mortality rates for patients undergoing mitral valve repair. Recent breakthroughs also are more efficient and much faster than the previous method of treatment. With mitral valve repair the recovery time of a patient has also been reduced significantly as methods like these are minimally invasive

**Nicki Phillips: Ben Hartlein, Engineer at Cargill**

My final project will detail the information that is used for the extraction process at Cargill. It will go into detail on the bean infrastructure, the different machinery that the beans go through, and the final products. It will give a brief description of the finished products that are produced by Cargill and their uses. For example, the oil is used in local fast food industries and the meal is used for animal food. It will briefly detail the composition of the oil-hexane mix that is produced. It will explain how the hexane is used to extract oil from the beans. This helps relate to the original essential question of "How can I distinguish between the chemical processing used at Cargill while still using it to research further into the field of chemical engineering?" It has real life relevance because it was my personal discovery that in order to succeed in any field that involves science, you must be able to apply basic concepts that have been learned all throughout your school career. Any one field cannot stand alone because science is an interconnected web. Thus no matter what I intend to do with my degree, the information and experience that I gained at Cargill have fostered growth and improvement within me. In addition, it will cover the basis of my research at Cargill on the length of drying time of white bean flakes vs moisture and fat content. It will summarize my research, the process that I went through to test the samples, and the general trend of my results.

**Cheryl “Alex” Morris: Daniel Cobb, MD at Gainesville Neurology Group and Gainesville Sleep Disorder Center**Stress is a daily aspect of life with no escape, and most people today report feeling more stressed than what they perceive to be healthy. Stress first targets the main systems of the body—cardiovascular system, immune system, nervous system, endocrine system, and digestive system—and no part of the body goes untouched when chronic stress takes its toll.

I focused on the physiological side of stress which can indicate many of the effects that stress leaves. The effects that follow stress are then on which elaborated, and advice is given about how to handle stress.

The purpose is to warn teenagers of what their constantly stressful lives can do to them and to learn means of managing it before it is too late. Although I focused on teenagers, adults experience the same effects of stress and can manage it similarly. Through this research, I learned just how impactful stress is to the body and how easily it can be avoided with helpful tips to handle both the everyday stressors and the occasional yet significant stressors.

**Connor Grady: Jason Grady, Paramedic at NGMC Cardiac Catherization Lab**

This research is an investigation of the relationship between cardiovascular disease and its spatial distribution. The purpose of the research was twofold: to (1) bring attention to the high risk and death rate of heart disease and (2) to show that influences not directly related to biological factors play a role in the development of heart disease. The goal was to find factors related to human geography, opposed to biological factors such as high blood pressure, high LDL cholesterol, and smoking, that increase one's chance of developing heart disease, specifically in Georgia. Three factors were analyzed involving social and physical environments: poverty, education less than high school, and the availability of convenience stores. These factors were cross-referenced with the mortality rate of all heart diseases in Georgia. The results showed a positive correlation as high concentrations of the three factors overlapped with high mortality rates.

**Caroline Dickey: Donnie Brewster & Jeff Crocker, Principals/AIA-NCARB at Brewster and Crocker Architects**

My project is focused on the influence of outside opinions on architects designing buildings. The goal of my work this year has been to help me determine how I am going to design as an architect. One of my mentors stated that architecture is an art that occurs under many restrictions and brings many elements together to create a functioning and beautiful building. Everyone is a critic and views architecture in different ways. Architects are tools that lead from an idea to physical, functional buildings. No piece of art will please everyone; and a building is just a functioning piece of art.  These ideas and facts that have come from my research and inquiries have helped me on my journey to becoming a successful architect.

**Joanne Jacob: Michael Veach, MD & Karla Thomason, MD at Gainesville Eye Associates**

It is not a well-known fact that eye health is delicate, and can often develop disease, and even less is known of the steps individuals can take to prevent it or treat it earlier. During my second week of mentorship at Gainesville Eye Associates, I remember observing a patient with a severe eye condition and discussing with my mentor about why this condition is so prevalent. After speaking with my mentor and peers, I realized that most of the population simply does not know much about maintaining good eye health. Through my project I hope to answer the questions of “What are common eye problems?”, “How do I know if I have it?”, “How can it be prevented?” and many more. Using the various microscopes and imaging techniques available to me through my mentorship, and numerous print and electronic resources, I gathered information that I believed would best benefit the community. I have shared my findings to classes at my high school, and organized a website to help spread information. The most important fact that I wish to impart is that regularly visiting an ophthalmologist or optometrist can potentially save your vision. After an individual becomes forty years old, they should regularly update their prescription, and maintain a healthy lifestyle. If these small steps can be taken, an individual can greatly reduce their risk of developing harmful eye disease and conditions.

**Bailey Pless: Rebecca Cameron, Director of PR/Promotions at WDUN/Jacobs Media**

This project addresses the essential question: Comparing radio and television, which career field would be best for me to pursue? It includes elements of my mentorship at WDUN, such as pictures I took for AccessNorthGA, traffic report recordings, and some news recordings. It also includes an interview with my aunt, Director of the Jerry Springer Show, and my mentor, Director of PR/Promotions at Jacobs Media. Using a list of jobs available, annotated bibliographies, and comparisons of different career opportunities in both fields, the presentation analyzes the steps to follow after high school and which path to take for each career. The information in this project is helpful to anyone interested in a broadcasting career that doesn't know which area of broadcasting they want to enter or what to do to achieve their future goals after high school. One similarity remains constant in both the radio and television research: experience is necessary. In order to be hired in both areas, you should have some idea of how to do your job already. That is why a degree in your desired field is important.

**Laura Gonzalez: Gina Savage, Registered Nurse at Guilford Immediate Clinic - Gainesville**

The eating style of person can affect one's body both positively and negatively. It can also prevent or cause may illness and sickness in our body. In our society, we are very high tech people and are always on the go, which causes us to eat fast foods and unhealthy foods. Having a healthy body can lead to a smaller medical bill as well.

**Summer Boone: Ronny Childs, Station Manager at TV-18 & Sydney Bryant, Broadcast and Video teacher at Flowery Branch High School**

The media is one of the most powerful distributors of information in today’s society, and journalists are the captains of this ship. By interpreting information in ways such as enthusiastic, persuasive, and informative, they can change the minds of the reader. From my research, I have compiled information that proves that journalists can create an entirely new outlook on this day and age.

**Dominic Lo: Doug Harkrider, MD, Emergency Department at Northeast Georgia Medical Center**

When looking into going into the medical field, there are many different variables to consider. There are the typical variables such as education, money, and time. I wanted to look deeper. I am interested in the trauma setting of the medical field. This involves dealing with a lot of death. I wanted to look at the psychological effects of death on a doctor. I researched different interviews with doctors and how they handle death. I also was able to discover different organizations that doctors have started because of their constant interaction with death. My main purpose in researching this topic was to prepare myself for having death be a part of my life and to see how to separate work life and home life. I have been able to interview my mentor and get an insight into the life of a doctor. All of this research has given me answers about the life of a doctor and the effect death has on it, while also easing my mind about being able handle both a personal life along with a working life.

**Alexis Gerdts: Rob Stewart, Natural Resource Manager at Elachee Nature Center & Katie Crumley, Public Information Officer for Hall County Government**

My question involves the nonprofit organization, Elachee Nature Center, and explores what ways it influences local culture. I researched different key parts of an environmentally conscious non-profit, such as interaction with the media and energy consciousness, and compared my findings to what I have observed and discovered at Elachee. School field trips, public bike and walking trails, holiday events, volunteer opportunities, trail races, tax-deductible donations, their involvement with local newspapers and businesses, and a strong local citizen backing keeps Elachee popular locally and in the Southeast. With the trend of hiring younger workers at this organization, the future influence of Elachee will only grow.

**Jocelyne Miller: Kristy Nicholson and Darla Stafford, Teachers at Martin Elementary School**

After studying different economies and education systems of different countries, I have come the conclusion that education and the economy directly relate to each other. As developing countries better their education level, their economy rises as well. Supply and demand play a large part in the rising economies. The higher the education level, the more likely people will go to school which will create a higher demand for educational facilities and teachers. When the demand rises, for a short while there will be a shortage of teachers, but as the country catches up with the demand, it starts to balance out. In the end the countries increased their economy. The more people going to school for both an education and a higher degree, they can make more money and GDP per capita would increase as the amount of money people receive in wages increases due to a higher level of education. In my presentation, I will show how countries have increased their GDP and GNP as well as their standard of living. Most of these results will not be seen in the short run but more so in the long run. With a higher standard of living, a country could expect to see a lower amount of unemployment and poverty. As the countries further develop their education, there will be more of a balance in socio-economic status among their citizens. A citizen could then participate more in the economy leading to a greater distribution of wealth in a country. I will be focusing on comparing Albania, Pakistan, and South Africa to the United States and each other.

**Kim Tran: Basil Anderson, MD at Oakwood Medical Clinic**

For my final Honors Mentorship Project, I will showcase the road/ steps to becoming a doctor. My original essential question was too broad so I decided to narrow it down to a more specific question. My project will include the years of schooling and other requirements needed in order to become a successful doctor. I will have different medical careers and the pros and cons of entering the medical field as well as additional information concerning the practice of medicine. With the help and guidance of my mentor, Dr. Anderson, my presentation will include an in depth interview and many pieces of advice that I have gathered from medical professionals throughout my mentorship experience. The purpose of my project is to provide information to aspiring medical students, like myself, because I want to know what it really takes to become a doctor and it is important to understand exactly what I, as well as other students, are committing to if we plan to enter the medical path.

**Bryce Schuebert: Steve Hill, Architect at H. Lloyd Hill Architects**

My project is about the moral aspects of contemplating architectural engineering jobs. My original idea was to talk about the need of an architectural engineer, but after doing my second semester annotated bibliography, I became very interested in the morals behind architecture. I began to look for controversial projects that had been completed throughout history such as the concentration camps. After compiling several examples, I began to try to figure out what led architects to complete such scandalous projects. I put the results in my presentation, and the reasons behind them.

**Jiovany Reyes: Staff Members at Gainesville Surgery Center**

How has technology changed the way surgical procedures are done in healthcare? This is my driving question behind my project this year in Honors Mentorship. At the beginning of the year I did not have an idea of what I was doing for my final project. Now one thing I have noticed while observing the surgical procedures is how quick surgery goes because of technology. By having an interview with my mentors, I learn that robotic surgery is becoming the next big thing! It has cut surgery time in half and has made the recovery process even quicker. With this project I want to show how much of an impact technology has had on surgery. The healthcare industry is evolving quickly. This project has given me a glimpse into my future and has showed me that as doctors the learning doesn’t stop after medical school.

**Lydia Moon: Kevin Connell, Music Minister at Hopewell Baptist Church**

Music is an art of sound in time that expresses ideas and emotions in significant forms through the elements of rhythm, melody, and harmony. Music has the ability to send physical and emotional responses to the body. Music is used to change emotions, to release emotions, to match a current emotion, to enjoy or comfort, and to relieve stress. Music is a language of emotion and is more than just sound, it is the main way humans express themselves and their emotions. I have discovered that people relate music to their emotions based on the tempo, scale, and instruments of a musical piece. The beauty of music is that there is not just one type or genre of music, but a large selection of music to please all sorts of people. It is in these genres that every emotion imaginable can be expressed.

**Bailey Smith: Andy Roberts, President, Turnkey Facility Maintenance**

The purpose of this research project was to explore the usefulness of executive personal assistances. A PA’s job is to minimize the workload of the executive and maximize the amount of energy the executive gets to focus on the tasks that make the company money. My research was directed toward the objectives to personalized applications that you can apply to your cell phone or computer, the number of personal assistants that companies have hired has decreased dramatically. The thought behind this decision is that if a company can download a program for $50-$100 that can virtually do what a personal assistant can do that saves them what they would spend on an annual salary for that employee. I also found that although these applications offer simple solutions to the hassle of hiring a new position, they typically cannot save the executive more than 30-40 hours a week, whereas a good PA can save his/her boss at least 60 hours a week.

**Emily Coughlin: Andrew E. Green, MD, FACOG at Northeast Georgia Medical Center**

Question: What are the chances of being diagnosed with cancer, and what habits can teenagers form now to maximize prevention? Almost everyone you meet knows someone who has been diagnosed with cancer.  The numbers are phenomenal with one in two men and one in three women expected to be diagnosed in their lifetime, and 1,665,540 new cases expected this year. However, even though the risk is high, we all never expect it to happen to us, especially us teenagers.  My goal is to break through that mentality with my testimony and by informing teenagers of the good habits they can form now for a healthy future.  I was diagnosed with ovarian cancer at fourteen years old, a diagnosis that no one would expect.  My diagnosis is clear evidence that cancer can strike at any time to anyone.  Many people seem overwhelmed with all of the information out there about preventing cancer, but lowering your risk can be easier than you think, so easy a teenager could do it.  Learning the good habits associated with cancer prevention, such as exercise and using sunscreen, can lead you down the cancer-free path.  Likewise, avoiding the bad behaviors, many of them being direct carcinogens, such as smoking and alcohol consumption, can also lead you in the right direction.  Learning these habits at a young age is crucial for a lifetime of maximized prevention.

**Chanel Lear: Amy Borrow, MD, Orthopaedic Surgeon at The Longstreet Clinic**

What factors influence the diagnosis of a concussion, and what measures can be taken to prevent concussions?

My participation in the Honors Mentorship program provided me the opportunity to learn under two profound and innovative doctors. They both practice sports medicine; however, my mentor this year also performs orthopaedic surgeries. While the cases the two doctors take on differ slightly, they both treat patients with similar injuries. One injury or case consistent between the two physicians is the concussion, which derives from similar activities and can affect patients of any age. My research, backed by my experiences at my mentorships, focused on three aspects of concussions: the signs, symptoms, and prevention. After my initial research on the diagnosis of a concussion, I learned of the severity of this injury to brain health in the short and long term. My research exposes danger signs of concussions and symptoms to educate coaches, athletes, and parents, so proper measures can be taken. While many believe the purpose of a helmet is to protect players from every head injury, during my research I learned that is not the case. Helmets were created to prevent injuries such as skull fractures. So how can we prevent concussions? Concentrating my research on signs and symptoms, I focused what can be done to prevent concussions in athletes. Education and communication to the community is the best way stop the number of concussions from rising. Did you know between 5 and 10 percent of athletes will have a concussion in any given sports season?

**Matthew Pruitt: Brian Rochester at Rochester and Associates**

At my mentorship I was able find out everything I was hoping to find out. I came into this program hoping to find what it takes to become an engineer. This experience gave me everything I hoped for and more. I was also able to find out the process’s involved in creating the buildings, roads, and almost all of the structures around us in our everyday lives.

**Jacob Bryant: Robert Boley, Director of Media at Blackshear Place Baptist Church**

Digital technology is the workhorse of modern business. The research to prove this statement was thorough and passionate. The coders and masters of technology are the wizards of our society. As technology expands the potential for businesses to not only survive but also to thrive increases exponentially. Without incorporating digital technology and media it is impractical and almost impossible to run a successful business. This research will hopefully give perspective as to how businesses can benefit from usage of said tools.

**David Lawson: Robert Dirksen, Director of Engineering at Gainco, Inc.**

The objective of this project is to examine the faulty perspective on parameters affecting engineering education, and education as a whole, that lead to poorly prepared students entering the workforce. The project is meant to analyze how education has failed, and how it can be improved in certain ways, both as a system and on the personal level. Students are often taught how to learn by rote memorization, with little grasp of the actual concepts at hand. In one way, it would be like a Greek scholar discovering a county where Greek is taught to everyone. He talks to one students and asks him about a concept in Greek philosophy, and gets a response of the work itself, word for word, but no understanding. The students in the foreign country know how to pronounce the letters, words, sentences, and paragraphs, but they don’t realize that the words actually mean something. This is the state of education in math and science at the moment.