Fast and Furious

Vanderbilt University

Amanda McCausland, B.E. in Biomedical Engineering, 2017
Will Holder, B.E. in Biomedical Engineering, 2017
Taylor Studer, B.E. in Biomedical Engineering, 2017
Nick Jelinek, B.E. in Biomedical Engineering, 2017

Executive Summary

First and foremost, we are aiming to grant mobility to children ages 2-5 who experience limited to no free mobility due to various physical and mental disabilities. We believe the newfound freedom of motion our product will grant could serve important in building self-confidence and courage for the children using it and as a result contributing to a higher incidence of social interaction in these children– interactions that can build healthy social habits. The car will also help rehabilitate the children physically and mentally. Furthermore, as many of these children will eventually be introduced to power chairs later in their lives, we believe our product can prove useful as somewhat of a stepping stone, and provide the opportunity to expose these children to the concept of power chairs at a much earlier age than is conventionally standard. Finally, our product will serve as a rehabilitative tool for as wide a range of children afflicted with varying physical and mental disabilities as possible, and will prove useful as device that can teach and encourage positive habits of posture or physical motion in these children through positive stimuli.

We aim to meet these four needs by designing a child's toy that can be learnt to be controlled by children of varying disabilities, grant them a wide range of mobility, and through these controls build positive physical habits in these children. We believe the best solution comes through the form of a toy car. The concept of an appropriately-sized, battery powered, ride-in car, not unlike those currently on the market as conventional toys, will both allow the child the freedom to move about in their environment, and through custom-tailored toy buttons or switches in place of the conventional controls will allow the child the ability to adequately control the car and encourage the development of positive physical habits and skills as well.

However, since our aim is for our product to reach as large an audience as possible, and since with such a large sample comes a wide array of varying disabilities, we aim to create a toy car that can be uniquely designed through an assortment of control attachments and modifications appropriate for differing disabilities that can be purchased separately in addition to a stock car base and easily assembled and modified by the parents or guardian of the child.

As our product is the first to offer a conventional, take-home solution for immobility in young children with physical and mental disabilities, no pre-existing competition exists for us. However, the possibility does exist of larger toy manufacturers who already produce battery-powered cars catching onto the idea of offering them as a rehabilitative tool in disabled children, and their products eventually holding portions of the market share. For now, our solution would exist as the only solution to be chosen by a consumer, but we believe if market competition does arise our reputation as a pioneer in the field and unique modular and customisable product designs will give us the edge over those hoping to compete with us.

The idea of rehabilitative toy cars as a source of mobility is not an idea uniquely ours, and the existence of the Go Baby Go program offers examples of at-home, custom-made toy cars built by parents or guardians for their children that display varying levels of success in meeting the same goals our product will. The design element that is uniquely ours is the modular design of the therapeutic adaptations, and is an element we are confident can be efficiently and adequately designed and constructed.

As our product would be offered as a toy rather than a medical device, it would not require any approval from the FDA or health care coverage needed. As a result, the product

could be purchased for the child out-of-pocket from either larger toy chains or more niche stores targeting juvenile disability.

Description of the Problem to be Solved

As stated earlier, through our product we are targeting four main pre-existing problems– the lack of mobility options for children with physical or mental disabilities aged 2-5, the difficulty for these children of gaining valuable social interactions with others, the lack of opportunity to grant early exposure for power chair technology and operation to those whom may require one later in life, and the problem of poor physical and postural habits resulting from disability that could be eventually corrected via positive reinforcement and therapeutic designs. Our product will also fill a gap, albeit a niche one, in the public market for early childhood options of mobility and physical therapy for children with varying physical or mental disabilities.

Project Objective Statement

To address this problem, our team plans to start by observing multiple children at One Hundred Oaks Pediatric Rehabilitation Center, as well as at High Hopes Preschool. We will be taking measurements of their shoulder width, tailbone to bottom of knee, tailbone to top of knee, knee to heel, hip to hip, tailbone to shoulders, and tailbone to heel, to see what dimensions are most common to fit in our prototype car. We will also be observing to see what some common range of motion limitations exist, because that will transfer to common necessary modifications. Apart from the common ones, we will see what modifications may not be as common in our observations, and implement them in the final design plan because there may be other children in the world who need that assistance as well. Our final design will incorporate all of the data from our observations and become a power car serving as a base model, with add-on pieces, which

parents can purchase as necessary for their child's needs. This design will broaden the spectrum of physically disabled children who can benefit from our product.

Documentation of the Final Design

Our final design will consist of a base model with attachable pieces to accommodate a wide variety of children with movement limitations that prevent them from functioning fully. So far, modifications we have thought of include an adjustable seat to move forward and backward on an incline, an adjustable steering wheel to bring it closer to or farther away from the child, a button to activate the power, and some kind of remote for the parent to have in case they need to step in for safety. These ideas are still just in the developmental stages, but they are some serious considerations for our final product.

Being a moving vehicle meant for children to use, our product must uphold some legal standards and standards set by parents, in addition to standards set by the Consumer Product Safety Commission. Our vehicle must be safe enough to protect the child from any unexpected crashes, and wired carefully enough to not explode unexpectedly. Legally, our product probably has to comply with standards similar to being deemed "roadworthy," or avoiding meeting that standard since this is just a toy. Parents are one of our largest stakeholders because it's their children we're putting in our cars, and their children they're trusting us with. If they want to see something in the car that we haven't thought of, we should do our best to meet that desire and implement it to the best of our ability without compromising the medical and therapeutic goal of the car.

Some risks involved with our project include improper wiring, not meeting stakeholder requirements, and inaccurate measurements. These risks are not major, as all of the pieces being

added to our car can be taken back off, fixed, and reapplied. They are also all adjustable, so improper measurements is easily fixable. The main risk is improper wiring, because that puts the child at risk and us in legal trouble. We have planned to mitigate this by having parents sign liability forms prior to us starting to work with their child.

Prototype of the Final Design

As we have not yet started on our modifications, the best visual representation we can currently provide is of the unaltered power car that will serve as our base model. We will be modifying a 6V Mini Cooper power car (in yellow) with multiple pieces of added hardware which will provide physically disabled children the ability to move on their own and gain a sense of independence. As we work on the car and get some actual modification parts attached, we will post visual and written updates, detailing the purpose each part serves.

Our team was not picked up from a previous team; however, we are continuing a project which has been in action across the country. Go Baby Go is a program, or an idea, which focuses on modifying toy power cars so they may be used for physically disabled children. We are building off of that to create a base model with optional parts for purchase as necessary instead of making a personalized car for each child. Benefits of this idea include a lower retail price for buyers because a main product which is available to the public is cheaper than a personalized

product. Another benefit is that the car will be adaptable as the child grows and improves in their movement development.

Proof That the Design is Functional and Will Solve the Problem

Currently, no test data or clinical trials are available from our research to prove that the design is a functional and feasible solution. There are several studies that indicate early intervention for motor skills, posture, and socialization increase the abilities of mobility-impaired children. This provides them with a foundation to improve their developmental trajectories and allow them to have a better chance of keeping up with their healthier peers. According to Lobo et al. 2004 and Lobo & Galloway 2008, general, task-related, and postural and object oriented experience help to increase purposeful, or means-end behavior, as well as object interaction ability. Further, several studies regarding powered vehicle use by mobility impaired children suggest that the children gain better socialization skills (Ragonesi et al. 2010, Ragonesi et al. 2011), driving, cognition, and language scores (Lynch et al. 2009), and confidence to move independently using a mobile robot (Galloway et al. 2007). Studies suggest children with autism spectrum disorders (ASDs) have motor control impairments and that these impairments cause decreased social skills (Bhat et al. 2011). This means that early training intervention for motor skills will likely improve their social ability. One longitudinal study observed 22 healthy infants every other week between 1 and 4 months of age. The results of this study showed that postural and movement training increased TIMP (test of infant motor performance) scores for head control items during and after training when compared to a control group that only had social interactions (Lee & Galloway 2012). Another report, which provides an overview of the toy cars and basic modifications, found that power wheels toy cars give mobility impaired children the

chance to explore both physical and social environments more readily, providing the children with a "general learning environment" in the clinic, school, and home (Huang & Galloway 2012). The toys were able to address movement goals and body function and structure goals. These studies provide a framework for our study from which we can build. They have important advice, but more importantly, they demonstrate the positive effects of self-controlled mobility, which is the basis for our project.

Results of a Patent Search

There aren't many patents in the database to compare our product to. While current solutions to the problem include powerchairs and scooters, these medical devices are mainly target adults and older children to help them gain individual control over their mobility. Infants and children younger than five years old are our main focus. This market is clearly much smaller, and this is part of the reason why there aren't medical devices to meet their needs. The children are also smaller in size, so they are easier to carry around without assistance. However, the largest contributing factor to the lack of solutions is likely the inability of the mobility impaired children to understand how to control the vehicles. Many of the children have impaired motor function and spatial awareness and so are unable to steer, accelerate, or stay in the vehicles. The modified power wheels cars will act as a toy and allow the children to have some control over their mobility, which will in turn help them develop coordination and social skills, as well as understanding cause and effect relationships; i.e pressing go to accelerate, or pushing a joystick right to turn right. One patent assigned to Sunil K. Agrawal, James C. Galloway, and Ji-Chul Ryu regarding a powered mobile vehicle (US Patent 8090488 B2 - Intelligent powered mobility for infants and special needs children) does have many similarities with our product. James C.

Galloway started the GoBabyGo! organization at the University of Delaware, which aims to provide individual mobility through modified toy vehicles for mobility impaired children and was the basis for this project. Their design safely secures the child in their seat with proper support and then allows them to move through a course. Sensors in the vehicle force the child to follow a predetermined path by providing haptic feedback. Haptic feedback, a reactionary force to movement outside of the bounds, allows the children to better understand how to move through the course, which then promotes perception and cognition, according to the patent.

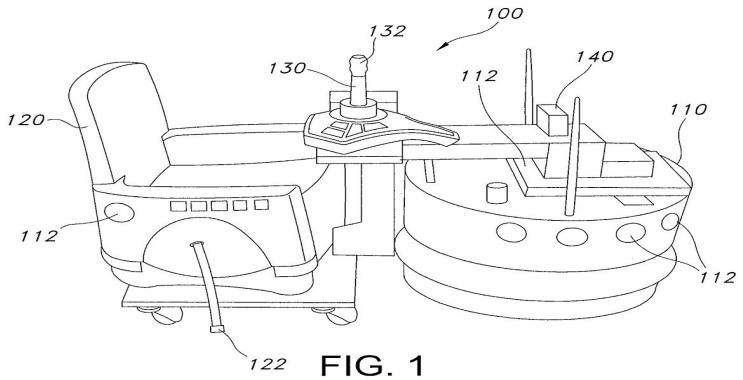

FIG. 1

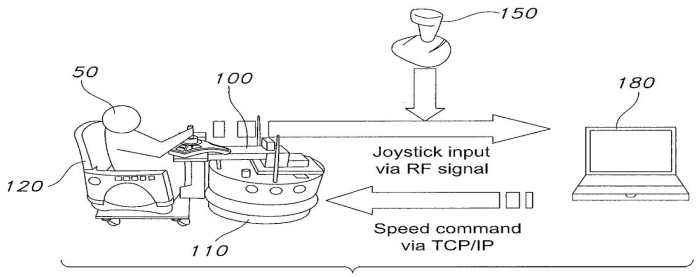

FIG. 2

Anticipated Regulatory Pathway

Our product has many modular components to provide for a range of conditions that a given patient would need to support their use of the product. The product itself is a power wheels car (electric ride on toy vehicle) that will allow for necessary seating adjustments, posture support, steering input, and acceleration input. It is important to note that this vehicle will not be considered a medical device and will not need FDA approval to get to market. This also means

that the product will not be reimbursed by insurance as it is considered a toy. The only comparable devices to these vehicles are powerchairs and scooters, however, they are considered medical devices. The power wheels vehicles have little associated risk because they have simple designs and no invasive aspects. This means that if the power wheels design were to be FDA approved, it would only require class I classification.

Reimbursement

Due to the nature of the device it cannot be expected that Medicare of Medicaid will be reimbursable. The device is not necessary for the daily functions of the children and is more of a novelty than a necessity. Companies view this device less as a medical device necessary for moving about and more as a toy that allows the children to better integrate into their social environment. While the device will be beneficial to the children's social capabilities and mental development, if they did not have the device it wouldn't be the end of their mobility altogether.

Estimated Manufacturing Costs

The largest expense that will be encountered is the purchase of the initial car. Depending on the style and size of the car, the price can range from $150 - $350. The lifespan of the cars is typically 3 years. If the child needs the car longer than that amount of time another 12V battery can be purchased for about $50. For this project we will only need one car, and since we only need it for the year another battery should not have to be purchased. We already have a car that was donated to our project so we do not have to worry about that initial cost. The other material cost will come from the accessories that will be added to the car, and the cost will be dependent on which accessory is needed for that specific child/car. For the purposes of our product that will be produced at the end of the year we will need to account for the cost of any accessory that

could potentially be added since we are making a versatile and multi functional car. A good majority of the added materials will be inexpensive things such as pvc pipe, fabric, and cushioning. At the moment, since we have not started any manipulation yet and are still in the observation phase, we don't know what type of parts we will need for the hardware and accessories. We do not know the cost of the parts we will need, but we do not foresee them being any more than $300. When it comes to final assembly, for the purposes of our project and due to the nature of it there will be no necessary fee for labor or manufacturing costs.

Potential Market

The customers for the car would be the parents of children with limited mobility and diseases such as, but not limited to, spina bifida, muscular dystrophy, epilepsy, and cerebral palsy. Another potential customer would be preschools, daycares, and elementary schools that allow children who need rehabilitation to attend. An example of this kind of institute would be High Hopes. They allow children with disabilities and children without to be in same environment and constantly interact to support and improve rehabilitation. The end user of the car will be the children with impaired mobility. At the moment the Nashville area will be the only area of focus. We will hone in on High Hopes, 100 Oaks, other interested Vanderbilt facilities and schools/daycares in the surrounding area. The final selling price of each car will slightly vary depending on which accessories and features the child requires. Ultimately, the cost of the car will include the initial cost of the car, accessory/feature costs, and the cost of labor to allow for some profit. We do not foresee this cost being any more than $500. The distribution channel will be through the BME department at Vanderbilt. Students that are taking the manipulation lab course will have the opportunity to build these cars for children and the

accessories that go with them and students that wish to take this project on alongside their coursework. It could be similar to the rocket team that the mechanical engineering department at Vanderbilt has. They would distribute them directly to schools/daycares and 100 Oaks or other Vanderbilt facilities that request the cars. In the future it would be ideal if PT/OTs across the country have access to ordering these cars with the accessories they decide their patient needs. The most effective way to do this would be an online site that allows the provider to input the child's measurements and impairments to receive the proper sized car, features, and accessories. Once the cars were distributed on this scale there would need to be more of a manufacturing basis for it to be plausible.

1. Letter of support
    a. **Required letter of support** A letter of support demonstrating that your project is student-led is required. If your project or venture is a continuation of work started by other students and/or faculty before you, the letter should describe the proportion of the design in which your current team has been involved. The letter can be from a faculty advisor, mentor, or industry partner.
    b. Still waiting on response from Professor Lowery
2. Key Team Member Resumes

Amanda R. McCausland

(305) 206-1927 | amandarmccausland@gmail.com | Nashville, TN

Vanderbilt University, Nashville, TN
Bachelor of Engineering in Biomedical Engineering **May 2017**
Minor: Engineering Management
Awards: 2016 Magnolia Award for Leadership and Service
Relevant Coursework: Program and Project Management (ENGM 3700), Systems Engineering (ENGM 3010),

Applied Behavioral Sciences (ENGM 2440), Engineering Economy (ENGM 216), Technology Strategy (ENGM 2210)

Experience

Covance Inc. **May 2016- Present**

Clinical Research Associate and Clinical Operations Project Management Intern

- Lead philanthropy fundraising project within the office to benefit a local nonprofit and successfully raised $4,001.
- Optimize patient and trial tracking strategies for numerous drug studies.
- Synchronize, organize, and maintain electronic trial master files and clinical trial management system files.
- Experience with the clinical drug development timeline and associated documentation, global site services, drug safety services, data management, clinical trial project management, and the role of Clinical Research Associates.

Vanderbilt University- *Sarratt Box Office and Student Center* **May 2015-Present**

Student Manager and Conference Coordinator

- Spearheaded all the needs of conferences staying at Vanderbilt in the summer of 2015.
- Analyzed and solved unique problems such as how to appease irate residents.
- Recognized and trusted as a public representative of Vanderbilt to professionals attending conferences.

Boucher Brothers **April 2013-December 2014**

Pool Attendant and *Beach Server*

- Provided 5 Star Diamond service to tourists from all over the world at the South Beach Marriott and Trump Hollywood.

Taco Bell **November 2012- April 2013**

Team Member

- Exceeded customer service expectations so much so that I was hired by Boucher Brothers, a 5 Star Diamond Award winning Hospitality Management Company, at the drive-through window.

Activities and Community Service

The Nashville Food Project **May 2016- Present**

- Garden and prepare healthy meals for distribution to people experiencing food insecurities in the local Nashville area.
- Raised $4,001 in the summer of 2016 to help with meal prep area expansion.

Engineering Transfer Student Mentor, Vanderbilt University **December 2015- Present**

- Guide transfer students entering the School of Engineering in professional and academic development**.**

Vanderbilt Student Volunteers for Science, Vanderbilt University **September 2015-Present**

- Conduct science experiments in a middle school classroom once a week as part of the science outreach program.

Diwali and Asian New Year Festival, Vanderbilt University **September 2014-Present**

- Expand cultural knowledge through participation in dance performances of two different ethnic holidays.

Alpha Omicron Pi, *Nu Omicron Chapter*, Vanderbilt University **January 2014-Present**

Pledge Class Chapter Relations Chair

- Planned sisterhood activities and maintained relationship between my pledge class and the whole chapter.

Vanderbilt Cancer Society, Vanderbilt University **September 2013-Present**

- Fundraise for cancer research, plan activities, and coordinate service opportunities.

Leukemia and Lymphoma Society **October 2011-Present**

- In 2014 I raised $520, a 36.8% increase from the previous year.
- Organized a team and fundraiser at Vanderbilt and at my high school for the annual Light the Night Walk while participating in my own separate walk and fundraiser through a fundraising website I created.

Certifications

- CPR/AED (ID: GRWJBX), First-Aid, FEMA Emergency Program Manager

Languages and Skills

- Conversational fluency in Spanish, Italian, and Hebrew
- Proficient in Microsoft Office Suite, Project, and Visio

NICHOLAS V. JELINEK

3525 Sweet Clover Street / Thousand Oaks, CA 91362 / nicholas.v.jelinek@vanderbilt.edu / 805 796 9278

ACTIVITIES/EMPLOYMENT RESUME

Education / Community Service / Internship / Athletics / Recognition

EDUCATION

Vanderbilt University **Senior (Class of 2017)**
Undergraduate
SCHOOL OF ENGINEERING

- Biomedical Engineering Major

Westlake High School **2009-2013**

- **GPA** weighted 4.48
- **ACT** composite score 36

PAST EMPLOYMENT/ACTIVITIES

Medtronic Diabetes

OPERATIONS INTERN **May – August 2016**

- Exposed to and self-educated in the operation and alteration of multiple high-level clinical MATLAB scripts responsible for the management of large arrays of raw data
- Responsible for the aggregated parsing and analysis of clinical BTS data through the combined effort of said MATLAB scripts into a finished product that is easy to understand from a visual level
- Responsible for the subsequent education and training of successive employees prior to my departure such that each individual could accurately operate and deeply understand the MATLAB programs needed to carry out the data parsing and analysis tasks needed

OPERATIONS INTERN **May – August 2015**

- Worked alongside fellow interns and Medtronic employees in the Operations department in creating and improving an effective and informative method of displaying SPC data from the sensor fabrications line.
- Educated and experienced with the sensor fabrications processes for the Enlite, Enlite Enhanced, and Enlite 3 sensor models.
- Aided in the creation of a real-time SPC data-tracking system to be used on the fabrications line by utilizing Microsoft SQL, Minitab, and Excel.
- Assisted in the identification, photographing, and cataloging of large quantities of used trial blood glucose sensors from the in-house clinic.

Westlake High School Advanced Anatomy Club **2012-2013**
SELECTED MEMBER

- Admitted into highly selective anatomy course mirroring a first-year medical school gross anatomy lab comprised of the top biological science students at Westlake High School with interests in future medical or medical-related careers.
- Participated in the complete dissection and clinical observation of cadavers and detailed study of the human body.
- Responsible for philanthropic initiatives to raise money for pediatric heart unit at Loma Linda Children's Hospital.

Westminster Free Medical Clinic **2011-2013**

STUDENT INTERN

· Selected for competitive student intern program to assist an all-volunteer medical staff with patient diagnosis and care for the uninsured members of our community.
· Pre-screened patients and presented symptoms and medical history to doctors for a range of medical issues including diabetes, hypertension, and various other maladies.
· Trained new incoming interns in second year of participation on clinic protocols and operations.

Coastal Marine Bio Labs **2011**
SELECTED MEMBER

· Selected to participate in a nine-day, fully immersive and advanced marine biology research program in Ventura, CA.
· One of nine high school students chosen to work alongside several Ph.D. marine biologists in an intensive post graduate level environment, with state of the art lab facilities.
· Conducted and presented research experiment findings related to the extraction of bioluminescent proteins present in sea anemones and their potential usage as *in vivo* neurological tracers.
· Expanded open water scuba diving certification to include research and peak performance buoyancy.

Westlake High School Water Polo
2009-2012
STUDENT ATHLETE

· Participated on high school water polo team for 4 years and club program in the off-season.
· Awarded team MVP sophomore year, and most improved junior year.
· Received scholar athlete award recognition for 4 years for maintaining strong GPA.

Sierra Service Project **2009-2012**
CHRISTIAN MISSION VOLUNTEER

· Participated in an annual weeklong Christian based mission project with other high school students, designed to aid low-income Native American families with various construction projects on their homes.

· Learned various construction skills while also participating in numerous discussion groups designed to enhance spiritual awareness and foster community service.

NOTEWORTHY

- **CALIFORNIA SCHOLARSHIP FEDERATION** **2009-2012**
  - High School GPA recognition

- **CITY OF THOUSAND OAKS YOUTH RECOGNITION AWARD** **2012**
  - Received leadership award for community service.
  - Gained recognition through involvement with Westminster Free Clinic.

- **CHINESE LANGUAGE AND CULTURE STUDIES** **2004-2012**

o Introduced to Chinese language in 4th grade
o Studied with mentor until high school**;** enrolled in AP Chinese

William M. Holder

167 Cedar Lane (914) 844 – 7231
Ossining, NY 10562
william.m.holder@vanderbilt.edu

Education

Vanderbilt University, Nashville, TN
May 2017
Bachelor of Science, Biomedical Engineering
Minor: *Engineering Management*

Experience

Mt. Sinai Hospital, New York, NY **June 2011 - August 2015**
Research Assistant

- Worked under Dr. Xiu-Min Li as a researcher for alternative medicines to treat asthma and food allergy
- Trained on column chromatography, enzyme linked immunosorbent assay (ELISA), cell culture technique
- Reviewed extensive literature related to traditional Chinese medicine
- Conducted laboratory research to further the development of ASHMI and FAHF-2 for market
- Participated in multinational investors meetings as a member of the scientific team

Vector Marketing, Westchester, NY **May 2016 – Present**
Sales Associate

- Completed 3-day sales training and attended elevation conferences
- Promoted to Assistant Manager within 2 months of start date; sold over $6,500 summer 2016 with average order of $350
- Received over 300 recommendations from clients

Heritage Management, Croton-on-Hudson, NY **May 2013 - August 2016**
Lifeguard

- Worked under Heritage Management guarding pools and managing pool chemicals
- Built relationships with home owners and dealt with issues arising during shifts

Publications

Ganoderic acid C isolated from Ganoderma lucidum suppress LPS-induced macrophage TNF- α production by down- regulating MAPK, NF-kappaB and AP-1 signaling pathways
Changda Liu, Nan Yang, **William Holder**, Jason Cohn, Rebecca Wang and Xiu-Min Li
Pediatric Allergy & Immunology, The Mount Sinai School of Medicine, NY, 10029
Induction of IL-10 Production by Dendritic Cells from a Human Myeloblast Cell Line and Peripheral Blood Mononuclear Cells from Asthmatic Patients by an Alkaloid Compound from Sophorae Flavescentis
Holder, William et al., Journal of Allergy and Clinical Immunology, Volume 131, Issue 2, AB1

Technical Skills and Memberships
Software Proficiencies

- Microsoft Office: Word, Excel, PowerPoint, Visio, Project
- Mathematica, MATLAB, LabVIEW

Languages

- Experience with coding in Python
- Intermediate Spanish writing/speaking skills

Taylor Studer

Current Address:
PMB 355821
2301 Vanderbilt Place
Nashville, TN 37235

taylor.a.studer@vanderbilt.edu

Permanent Address:
1294 N Bryan Rd
Jacksonville, NC 28546

Education

Vanderbilt University Nashville, TN — May 2017
Bachelor of Science, Biomedical Engineering
Minor, Engineering Management

North Carolina School of Science and Mathematics Durham, NC — May 2013
High school Diploma

Experience

3B Financial Jacksonville, NC — Summer 2016
Intern

- Balanced accounts for two companies, created user-friendly spreadsheet for accountants to quickly figure out daily balance
- Took inventory of the vehicles for three companies, kept track of/filed the titles for all of the vehicles
- Organized credit apps for the past three years
- Paid bills to multiple vendors
- Handled car payment transactions
- Wrote commission reimbursement checks to the management team
- Kept track of warranties (in house and extended)

Vanderbilt Recreation Center Nashville, TN — Spring 2016-Present
Supervisor

- Managed a team of 16 referees
- Set up fields, recorded scores, shut down fields
- Signed in referees, evaluated referees, lead referee clinic
- Filed injury reports, provided first aid, handled unruly players

Violet Flower Boutique Nashville, TN — Fall 2015-Present
Campus Representative

- Conducted PR for the boutique via social media and wearing attire to local events
- Worked with the owner to create new outfits/looks

Vanderbilt Recreation Center Nashville, TN — Fall 2014-Present
Referee

- Officiated softball, flag football, basketball, and soccer games
- Corresponded with team captains to schedule games
- Took inventory of equipment
- Set up and cleaned up playing fields
- Signed in teams, recorded scores, and made sure teams were well versed in the rules
- Kept unruly players calm or took necessary action

Kicking4Hunger Jacksonville, NC — Summer 2012
Volunteer/Site Leader

- Booked location for soccer camp, organized a team of 6 coaches, and obtained necessary equipment through donations
- Conducted PR for the camp via local newspaper, social media and radio announcements
- Created daily schedules and drills for the campers, then coached and ran a camp of over 50 kids
- Collected nonperishable food donations from the campers for local soup kitchen

Extracurricular Activities

Asian New Year Festival and Diwali, Hip Hop Choreographer and Dancer	Fall 2015 – Present
Alpha Delta Pi, Sorority	Spring 2015 – Present
Mayfield Living Learning Lodge, Communications Chair	Fall 2014 – Spring 2015
Vanderbilt Student Volunteers for Science	Fall 2013 - Present
KIPP Academy Nashville, Tutor	Fall 2013 - Spring 2016
Club Sailing Team	Fall 2013 - Present

Skills

- MATLAB
- Python
- Japanese Language Proficiency
- Mathematica
- Microsoft Windows and Office