Team Smile

Project Proposal

David Morrison, Tristan McPhail, Anugo Mojekwu,

Chris Polack, Shehryar Haider

Problem Statement

Problem

It is estimated that by the age of 18, approximately 14% of adolescents in the US will have experienced a major depressive disorder. An additional 11% will have suffered from minor depression. Adolescent depression is a serious disorder, often negatively impacting academic performance, social development, and overall health. Depression in adolescents has also been linked to an increased risk of adult depression, substance abuse, early parenthood, and suicide. If the disorder is not resolved in its early stages, it can worsen as an adolescent continues to grow and develop. As many as 84% of adolescents with depression will continue to experience depressive episodes as adults (Abela & Hankin, 2008).

While psychotherapy and medication have been proven to be effective in treating depression in adolescents, studies have found that approximately 77% of children aged between 12 and 17 with depression remain untreated (Schiller, Schulte-Körne, Eberle-Sejari, Maier, & Allgaier, 2014). Furthermore, other studies have indicated that once adolescents develop depressive symptoms, it takes, on average, several years before they first receive treatment (Meredith et al., 2009).

The majority of these aforementioned adolescents enter college with depressive symptoms. Many first-year students also develop depression within the first year of attending school (a problem that we will explore further, later in this paper). As a team dedicated to helping college students suffering from depression as well as those who may be on the path of developing depression, we wish to ask the following question: How might we decrease the rate at which college students develop or continue to suffer from depression?

Significance

As depression in college students is a huge global issue, affecting millions each year, there are several serious consequences to allowing it to develop or leaving it untreated. For one, the illness tends to progress over time and becomes much harder to cure. Studies have shown that untreated depression in college-aged individuals often leads to a high risk of symptom progression, recurrence, chronicity and comorbid mental disorders (Frühe et al., 2012) This, in turn, is directly related to other problems later in life such as homelessness, joblessness, alcoholism and even suicide (Dinan, 1999).

Depression that remains untreated has also been linked to various physical ailments. For example, individuals with depression are four times more likely to have a heart attack than individuals without depression. These individuals are also at a higher risk of experiencing a second heart attack or death (National Institute of Mental Health, 2010).

These effects are not only tragic for the individuals who suffer them, but are also detrimental to society as a whole, with financial costs being the primary burden. For instance, a study conducted in 2009 found that depression was the most costly expense to employers. Between the cost of medical treatment, absenteeism, pharmacy, and inability of employees to work at full capacity, as a result of depression, employers lose more than $350,000 per thousand employees per year (Knopf, 2014).

Depression also places a great strain on healthcare providers with depressed people consuming 18 percent of nearly any given health system's uncompensated spending (Knopf, 2014). As previously mentioned, adolescents who do not receive treatment for their depression are likely to suffer from it in later life. This becomes especially a problem when they become much older and require more care. For example, one study found an excess annual adjusted

healthcare cost of $27.4 million for depression and $119.8 million for comorbid depression and anxiety per 1 million people aged 65 and older (Vasiliadis et al., 2013).

While there are many factors that lead to the development of depression in college students, the cause we wish to address is the stress that first-year students experience when making the transition from high school to college. Specifically, we wish to address the stress associated with being removed from a well-established social network (high school). Various studies have shown that first-year students do not find it easy to adjust to college life. For example, a study titled "Factors Predictive of Depression in First-Year College Students" found that approximately 60% of college students report feeling lonely and that 87% report feeling overwhelmed by their new environment. Furthermore, about 33% report feeling depressed to the point of not being able to function normally. This study identified stress as one of the primary sources of these findings and claimed that one of the main causes of such stress is a lack of involvement within the community (Brandy, Penckofer, Solari-Twadell, & Velsor-Friedrich, 2015).

Another study titled "Causes of Depression in College Students: A Cross-Lagged Panel Correlational Analysis" looked at a variety of factors that could lead to depression in college students. It concluded that a feeling of loneliness was one of the most significant factors in the development of depression. The study emphasized that students who are socially engaged in college are less likely to develop depressive symptoms (Rich & Scovel, 1987).

By decreasing the rate at which college students experience depressive symptoms, we can greatly reduce the aforementioned costs to society. For example, suicide is currently the third leading cause of death among 15 to 24 year-olds, accounting for 20% of annual deaths (Centers for Disease Control and Prevention, 2012). Considering the majority of suicides are linked to depression, as the number of depressed adolescents seeking treatment rises, we can expect suicide rates to fall. Increasing the rate at which adolescents seek appropriate help also has numerous economic benefits. As previously mentioned, depression has been linked to increased costs for employers as well as for health care systems. Therefore, solving this problem would lead to an increase in productivity within the work-force and has the potential to lead to a decrease in overall healthcare costs.

In addition to benefiting society as a whole, working within this problem space can provide numerous benefits to the individuals affected by depression or at risk of developing it. For example, several studies have shown that students who are heavily involved in social activities on campus tend to have a significantly higher cumulative GPA than those who are not involved (Webber, Krylow, & Zhang, 2013). Other studies have found that students who are involved in social activities on campus are significantly more likely to study abroad or develop a more diverse network of peers (Rust, Dhanatya, Furuto, & Kheiltash, 2008). Thus, through our work, we hope to allow students to grow into more successful and well-rounded individuals.

Stakeholders

When analyzing the weight of a problem, it is necessary to evaluate its consequences on a variety of people, or groups of stakeholders. For any given problem, it will always be the case that a problem has a greater effect on one group of people than it does for another. On the same token, different groups will have contrasting levels of investment in the effort to find a solution to the problem. While depressive illness is a widespread issue in our society, it remains a fact that not all people treat this issue with equal weight. A study conducted in 2010, for example, provided evidence that even cultural and ethnic background can lead to a difference in the way

mental illness is viewed or handled (Carpenter-Song et al., 2010). Narrowing the scope to depression within a university setting specifically, there are different groups of stakeholders that each have a varying level of interest in the problem. These groups can be roughly divided into the following groups: the students who are experiencing depression, other students in the same school community, and the general public, which includes all members of the community that do not fall into the main groups listed above.

Depressed students are the individuals who are affected directly by the issue involving a lack of treatment of individuals with depression. In addition to the large number of college students who are diagnosed with depression, there are additional students that remain undiagnosed or that may not even realize they exhibit the most common symptoms. Nevertheless, students experiencing a depressive disorder are the most central stakeholders of this problem. When students do not receive treatment for their illness, they are more likely to see no improvement in their symptoms, or even notice a worsening of their condition. It is therefore extremely important that these individuals receive treatment as soon as the problem can be identified. However, there are additionally a range of reasons that explain why any individual with depression may not be willing to seek help, social stigma, treatment fears, fear of emotion, anticipated risks, and the fear of opening up (Vogel et al., 2014).

The group including other students in the university community is very dynamic because the investment of different college students in the issue of depression varies widely. For example, there may be students that have experienced certain aspects of depression in the past but that are no longer affected. These students will have a higher level of interest in the wellbeing of other with mental illnesses. In addition, other students may be very close to a student that is struggling with depression; these students are more likely to be negatively impacted when the depressed individual does not receive help. The friends of a depressed student may begin to carry some of the burden of the illness. Finally, this group includes students that have no association with depressed individuals. These students will often have very little to no involvement in the problem on a daily basis. If these students do not see the negative consequences of depression in the college setting, they are less likely to understand that it is a significant issue. On the other hand, there are occasionally widespread, tangible consequences that affect the school community as a whole, such as the suicide of a peer.

The public is the group that is the most distant from university or college students that are experiencing depression, and is therefore the least invested group in this problem. This group also tends to feed much of the stigma and misinformation that surrounds depression. A study conducted in 2004 analyzed public attitudes towards those with mental illnesses and found that 42 percent of participants agreed that statement that anyone with a history of mental illness should be excluded from public office. In addition, more than 60 percent of participants believed that “pulling oneself together” is an effective method of treatment (Ver Duin et al., 2004). There is a subset of this larger group that consists of those who have experienced some form of depression during their lifetime. Considering the fact that nearly 18% of the adult population of the United States suffers from depression, this is a large portion of the public but still a minority (ADAA, 2015). This subset has more experience with this issue and therefore more understanding of its causes, effects, and significance. It is this group within the general public that is more likely to push for a solution to the issue of untreated depressive illness; these people can empathize with students in college who may be struggling with depression and are will be, as a result, more invested in this issue.

Context and Existing Solutions

Here at Tech we are faced with the problem of mental health daily as we hear of several upsets once in a while of a student falling on the way side to emotional discomfort and psychological illness. As stated in the Counselling Center website, 'The Georgia Tech Counseling center is the organization at Tech in charge of mental health. The mission of the Georgia Tech Counseling Center is to enhance the academic and personal experience and success of all students by providing a variety of counseling and psychological services to students and the greater campus community. The Counseling Center accomplishes its mission by offering services that facilitate students' personal development, assist in the alleviation, remediation, and prevention of distress, as well as services that educate students in ways that develop self-awareness, self-reliance, and self-confidence. The Center is staffed by licensed psychologists, counselors, and marriage and family therapists, as well as pre-doctoral interns and graduate practicum students (Georgia Tech Counselling Center, 2015). The center is doing well in its activities, but it definitely needs some help especially because of the number of people under the service of this organization. We believe it would be an important asset of the counseling center to be able to reach out to a maximum amount of students without directly relating them to mental issues. A way to look into things is to try tackling stress which is one of the main causes of depression, because a lot of people are actually stressed in Georgia Tech. Tackling stress through student involvement in extracurricular activities is one way we have looked at as effective in reaching our goal of a mentally healthy campus. We also have the mental health task force. The underlying theme in task force discussions is the impact of Tech's challenging and competitive academic environment. Students holding themselves to a high standard, and faculty holding them to one as well, can sometimes result in a high-stress, high-productivity environment. As stated in a news report on the Georgia Tech website 'In a 2011 National College Health Assessment, nearly 90 percent of Tech students reported being "very stressed" compared to a national average of around 53 percent'. Still, many students don't realize the way stress may be affecting them. With these stats, it is evident that Team Smile's proposed work is definitely in need to be implemented as soon as possible into the Tech community.

As a team, we have been able to do some research and look in depth into possible existing solutions, especially on campus at Georgia tech. Here are some of the solutions:

JacketPages serves the student body at Georgia Tech by connecting students with student organizations and student organizations with your Student Government Association (SGA). This allows you to browse student organizations, to get involved, and, if you're already involved, to communicate your needs to SGA. Once you're logged in with your Georgia Tech account, depending on your user profile, you can use the menus and toolbar to search organizations, research campus events (and add them to your own calendar), and interact with SGA's bill submission system(JacketPages, 2014). This is a fine page which was created by Georgia Tech to help students get involved in campus activities and learn of various organization on campus. But right now, we believe the page does not hold enough information to help a freshman just coming into tech be able to settle down quickly and get involved. As it stands the JacketPages is not really famous amongst tech students and is not updated frequently as such holds outdated information. It holds information about upcoming campus events, but this information is not relayed to the students except they visit the page. Finally the page holds no form of organization categorization to classify groups under different title. Doing a classification can help give quick options to groups one can be interested in. Currently the list of organizations is an alphabetic list with very short vivid description of campus organization, which we believe is not enough.

Another is a program about to be established in Georgia Tech called The Burdells Buddies which is a peer counseling initiative that would one day establish a program to train students to counsel their peers. This is to be established with the counselling center of Georgia Tech, and was made on the initiative that booking counselling appointments with the counselling center is pretty tasking due to the load on the staff and as such would be efficient if fellow students might be trained to help students booking appointments. As outlined by the team, the role of a Burdell Buddy would include assisting with Counseling Center Outreach, increasing the awareness and visibility of the Counseling Center, dispelling stigmas about counseling and provide a less intimidating environment for students to seek help (Garrick, 2014). Also the burdells buddies is a fine plan to reduce depression rates but we believe it lacks in its outreach abilities. That is to mean the range of people which would be helped by this is very little in comparison to the magnitude of the problem. Not everyone might be able to gain access easily to the services of Burdells buddies and this has to be solved.

Finally we have email lists. Every day students are pounded with several emails which of many aren't read at all. We are privileged at tech to receive emails from the director of communications Melissa Moore on upcoming events and activities at tech. We able also able to receive brief information about these events and also the organizations hosting them. The email lists are very important but lack in the sense that too much information is pounded all at one time, which discourages people to read. If these emails could be categorized and sent as various packets of information under a general heading, it would be seen as more useful.

Team Smile needs to get involved in this because we are trying to concentrate on college students better reduce their stress levels through getting involved in on campus activities. We need to get into this because so much is thrown at students daily, which is quite overwhelming. And we have seen that getting a student involved in activities outside school work would help take their minds off school a bit and enjoy what they love to do best. By tackling stress, we would be able to in the long run help prevent depression which is one of the main outputs of depression. As such minimizing this surplus information into one application would be useful because one unit could hold all this information for an incoming student at tech to find interests and easily settle into college life.

Why is it Still a Problem?

There are several reasons why college students continue to develop depression. As previously mentioned, stress and a feeling of loneliness are major contributors to the problem. And despite the fact that Georgia Tech has over 400 student-led organizations and hundreds of monthly events, many students continue to report feeling overwhelmed, stressed, and lonely. Why is this so?

One of the main reasons why this problem persists is the fact that there is an overabundance of information available to students. Students at an academically rigorous university often do not feel that they have the time to sift through hundreds and hundreds of pages of information, especially when they unsure as to whether they will find anything that interests them.

Another problem is that the information that is available to students comes from a variety of different resources. Students may find information on Jacket Pages, in multiple student E-mails, on the Student Center website, and many more places. Having to search through each sources is both time-consuming and aggravating.

Proposed Work

Goal

When touring universities such as Georgia Tech, hearing the phrase "We have over 400 student organizations on campus and host hundreds of events each year!" is not uncommon. Colleges often use these impressive figures as a way of encouraging prospective students to commit to the universities. While the numbers sound appealing, many students have run into the problem of feeling incredibly overwhelmed once they start sifting through all the information that the university supplies about its organizations. This is a major source of stress that can lead to a lack of any involvement at all (resulting in a feeling of loneliness), or can discourage a student from finding the "perfect" club for them.

Our goal for the upcoming year is to remove this source of stress from first-year students. We plan to develop an integrative application that recommends activities to students based on their personality, interests, and availability. Essentially, we wish to automate the process of organizing hundreds of pages of information from various resources and sifting through it so that each user of the application only receives information about clubs and activities that he or she is interested in.

Objectives

Objective One: Create algorithm that will use student interest forms to filter recommended clubs and other activities at or around Georgia Tech

Background

After interests of the individual student is collected, in order to allow the app to differ from the current club description website, Jacket Pages, the information must be used to sort all the clubs according to the student's specified interests. All student clubs and organizations at Georgia Tech will need to categorized in various large topics (i.e. athletics, religion, Greek, service, ect.) as well as subtopics (i.e. for religion: Christianity, Islam, Judaism, Hinduism, ect.) and if necessary, further subtopics (i.e. for Christianity: Catholic, Baptist, Lutheran, Wesleyan, non-denominational, ect.). By breaking down the specifics of each organization on campus, and then matching these topics with the specified interests of students, the application will recommend a select set of organizations and clubs to the student, allowing for the student to have a better understanding of how they can get involved with their specific interests at Georgia Tech, without overwhelming the student with hundreds of unknown clubs, many of which may not interest the student. The organization and filtering of the organizations available at Georgia Tech is a key part of reducing stress, as it simplifies the search for new students, as well as opens up the opportunity for returning students to look into new areas of interest and know determine which organizations are most likely to fit their needs.

Methods

In order to properly organize the vast number of organizations at Georgia Tech, each club and organization will have to complete an information form, describing their organization. This form will be created and distributed by Smile, and will ask organizations to specify the type of organization, the activities the organization participates in, the general meeting times of the organization, specific requirements of the organization, ect. Using this information given, Smile will separate each club into various categories, linking each organization with a list of specific selections that are present in the student survey discussed in the first objective.

Outcomes

First, in order to be successful, Smile must collect updated information from all the organizations at Georgia Tech. Then, using this information, Smile must both separate the organizations into proper categories and subcategories, but must also link these categories to selections made in the student survey.

Anticipated Problems

A major problem that could delay the development of a successful filtering algorithm is the lack of support from campus organizations. Without their updated information, Smile will be unable to organize the club into the system, limiting the probability that this organization will be recommended to students. In addition, due to the large number of organizations and their diversity, it may be difficult to develop proper categories that describe all the organizations on campus.

Objective Two: Develop an integrative application that recommends activities based on personality, interests, and availability

Background

While the algorithm itself is the heart of our project—it is what separates our product from what is already available to students—the development of the application itself is just as, if not more, important. Without a well-developed, easy to use application, our algorithm will be of no use to the average college student.

Methods

There are several steps to developing the application. First, we must plan the logistics of the application—what function it will serve, what features it will entail, how those features will be implemented, and the overall user experience. Users will first be asked to fill out a form that asks questions regarding personality traits, interests, and a variety of preferences, such as whether they enjoy activities that are indoors or outdoors, competitive or leisurely, etc. Using the algorithm we plan to develop (see Objective One), the application will curate a list of organizations that are the best match for the user. User will have the option to view detailed information about each organization (such as what they do and when they meet) as well as the user's interests and preferences that the organization matches.

In addition to organizing and suggesting organizations for the user, our application will also actively recommend events that are occurring on campus. When initially setting up the application, the user will be asked if he wants to connect his calendar to the application. If he opts in, the application will actively review his calendar and make recommendations for events that are deemed a good match and that will fit into his schedule. The user will have the option to add the event to his calendar directly from the application.

After determining all of the features that we want to include in our application, we must design our user interface. While we are not entirely sure what we want our application to look like, we *do* know that we want our design to be simple and user-friendly. A possible design involves a home screen that lists upcoming events and meetings for organizations that the user saved. A menu bar on the top of the screen would allow the user to see recommended organizations, a list of all organizations, and a settings page where the user can adjust his preferences and interests.

Outcomes

This objective can be deemed successful if we have a fully functioning application that works as planned. Most of our feedback and outcomes will depend on Objective Three, when we implement beta-testing.

Anticipated Problems

There are several problems we may run into when developing the application. For one, the software development skills of our team are fairly limited—no one has experience with app development. However, we could alleviate this problem by clearly defining what we want the application to do, how we want it to look, and then hiring a developer to create the application for us. If, however, we decide to develop the application ourselves, we will have to make sure to use flexible design by writing code that is easy to understand, change, manipulate, and update. We also want to pay close attention to the memory usage of the application (how large it is) and how the application will store user information.

The final problem that we will have to actively avoid is "feature creep." Oftentimes, app developers get carried away with adding more and more features to their application, to the point of making it cluttered and confusing for the user. We must ensure that our application serves a single purpose and may want to consider making an entirely new (or supplementary) application for any major features we may want to implement in the future.

Objective Three: Assess user opinion

Background

After an algorithm is written in order to categorize user preferences, it would be highly important to assess these opinions of the user. Just categorizing would hold no effects on the choice of the user but being able to assess and bring out meaningful results which would fulfill the requirements of the choice of the user. If this is not done the motive of the project would be failed as we would not be able to use data obtained from the user to help produce meaningful results that could help the user find what he or she might be interested in on the Georgia Tech Campus. If this is not carried out it also destroys one of the purposes of the project which is to able to cut down the large information about things going on campus, into packets of information which one may be interested about. These interests are categorized from ones results from a personality and availability test.

Assessment of user options may stand as one of the most important objectives as this stage would largely affect a user when this application is implemented. Assessment of results should be taken very serious because through this assessments results are granted to the user, which hopefully would be taken into consideration.

Methods

In order for this objective to be carried out, it is important that various steps are taken to ensure success is attained:

1. *Assign user preferences to various categories.*

   Once one is able to complete the survey/personality test, we would be able to categorize those preferences of an individual under different headings. For example, a student who has been involved in soccer, rugby and football in high school, and holds strong passion for them would have his or her preferences under sports. Other categories could include theatre, community service, leadership and so on. This would definitely be

carried out with the help of an algorithm. This algorithm would be able to read through selected options by the user and also assess level of involvement of the individual per activity, being able to categorize their preferences under one heading. Once this is done a very generalized categorization could be given to the individual, which would definitely not be binding if the individual feels he or she doesn't fall under that type.
In cases where one may hold numerous diverse interests, many categories may pertain to this person which the algorithm would be able easily sieve through data and pull out the most persistent category.

2. *Place categories to relevant organizations, activities and events.*
   After the assignment of preferences is carried out, it would only be complete by assigning these categories to various activities. For example, in the before mentioned example of the sports loving student, it would most probably be fitting for such a category to pull up on Campus sport events such as the intramural sports pertaining to their interests, mention possible club/varsity teams and also outdoor organizations at Georgia Tech such as ORGT and the Campus Recreation Center. Fitting options would be assigned to various categories by the use of an algorithm which would be able to place possible related activities, events and associations to each category. This would be easily done by giving pre-existing classes to each activities, events and associations such as social, sports, religion and so on thus making it easy to read and relate preference categories to activities, events and associations categories. This relationship could also help provide possible on line applications into these organizations,

Outcomes

After this objective is carried out, it would be important for positive and relevant output to be provided to the user. To be successful, we believe that a user should be provided with relevant organizations and events that fuel their interest. For example a religious student should actually be given feedback on events by the CCF, Catholic Center or Baptist Christian Ministry at Georgia Tech. Right output should be given from inputs provided by the user. Also if one believes he or she is not provided with what they believe fits them, they would be able to find similar activities for themselves. We would also like that students take this feedback importantly and actually go in and apply to these activities and actually get involved. The cycle is not complete without the student doing their part by getting involved and relieving their personal stress through extra-curricular activities.

Success or failure would be easily assessed through how many students take the advice provided by the application and actually go into the field and look into things which were provided by the app that could help arouse their interests on campus. If we notice a large number of such students, it would be seen as success while on the other hand if no one take the advice, then it would be seen as failure.

Anticipated Problems

No application could be a 100 percent efficient and as such would hold bugs which might cause production of incorrect output. One problem might be the written algorithm might not be completely efficient as it might not hold all possible base case permutations from the inputs. This could produce wrong outputs to the user. Also possible bad feedback could be received from users, as they might feel that the output given to them doesn't fit their personality. This is in the

sense that the algorithm was run correctly. Here not much could be done as human nature and reasoning cannot be changed. If one feels this or that does not fit them, they also have the choice to pick whatever fits them.

Objective Four: Promote use of application across campus

Background

It is imperative that the application is well advertised or we will not be able to achieve our goals, and a lot of work will be for nothing. There are numerous ways that we can ensure that the application is well advertised and used by incoming classes as well as current students. We will focus heavily on promoting the application upon completion.

Methods

There are many things that we can do in order to ensure the application receives widespread attention. One of the most important things that needs to be done is to collaborate with the University to make sure that incoming students are well informed of the during their FASET sessions, in a similar way to how we were informed of apps such as Jacket Guardian. FASET leaders should also recommend it to their respective groups. Along with this, we can use Georgia Tech's email system to promote the application. Adverts in the form of flyers across campus will be another effective way to inform students. Along with this, we could collaborate with the counselling center and have them endorse the application as an effective way to help combat stress.

Outcomes

A successful promotional campaign will ensure a wide user base and help ensure that more people keep joining through the app achieving popularity through word of mouth. This will also help us evaluate how useful the application may be through feedback and the number of people who use – and continue to use it. Therefore we will know how to best improve it.

Anticipated problems

It may be difficult to get the university to collaborate with us on some things, such as the FASET sessions that are extremely important for our success. Along with this, we may find issues getting a large number of people to join immediately and, more importantly, regularly use the application.

Objective Five: Investigate future work and the potential to expand

Background

We need to make sure that we constantly improve the app and cater to feedback of the community so that we don't stagnate and this project keeps moving forward. There are many directions that we can pursue after the initial site is up and running.

Methods

Of course the development of the smartphone applications as soon as possible is of paramount importance as it makes things far more accessible for everyone using the system. We hope to continuously find ways to improve the app, such as linking it to the counseling center so that you can schedule appointments with professionals if required, to providing links to sign up for intramural sports. Increasing the popularity of the app continuously is one of the best things

that we can do, and as such we can continue to promote it at any event arranged by the school or student groups.

Outcomes

Through persistent and aggressive expansion, we can make certain that the application picks up speed and creates serious demand for regular improvements and upgrades. This will allow for more popularity and will become a useful tool for college students at Georgia Tech to use. If done right, we can ensure that the student body is well equipped to handle the stresses of college life.

Anticipated problems

It is possible that if the app does not gain the trajectory required to become an everyday tool for students at Georgia Tech, that we may lose popularity and people might stop using the application altogether. We may lose sponsorship from the university, and it is possible that the application may not take off at all.

Research Team

Smile currently includes five members, each of which participate in various roles. As the team continues, we will develop specified titles for each member so as to properly use the skills of each member, as well as to better distribute work load. Note, however, that if the team does not have enough members to fill each position, that some members may hold more than one title. The positions include:

- Team Chairperson:
- Secretary
- Treasurer
- Technical Expert
- Communications Officer
- Research Engineer

Title	Role	Desired Qualities	Need
Team Chairperson	• Oversees the activities of the team • Organizes and leads team meetings	• Able to speak in front of others • Able to lead discussions, serving primarily as a mediator • Able to analyze the progress of the team and identify and solve problems within the team	The Team Chairperson is needed in order to guide the group through meetings and determine if the group is making progress as well as identify potential problems within the group and address them before they become an issue. This person will serve to keep the team focused and help drive the project forward.

Secretary	• record team meetings • send out copies of the minutes to all members • keep important team information updated and accessible • edit reports • manage communication within the team • manage team schedule	• organized • good communication skills • time management skills • proficiency in drafting and editing research papers	The secretary serves to maintain all basic information about Smile. By recording team meetings and managing the team schedule, they will help to keep the team on track and help to determine the progress of the team.
Treasurer	• manage budget • contact potential financial supporters • purchase or manage the purchase of any needed materials	• organized • skills in money management • willing to connect external sources for possible financial support • able to communicate with financial supporters/ Grand Challenges advisors in order to obtain needed materials	The Treasurer will maintain Smile's budget, ensuring that we are able to obtain any needed materials and communicate with any financial supporters so that they know how money is being spent and the benefits of their support
Technical Expert	• Work on developing a working algorithm for application success • Design digital media (i.e. videos, website, ect…) • develop a system to test the application	• Well versed with technological advances and equipment setup. • possibly CE/CS major • Understands the current technological algorithms	The Technical Expert will be in charge of the majority of digital develops of the project. They will be leading the development of the needed filtering algorithms and the core of the website/app.
Communications and Outreach Officer	• communicate with any potential supporters • design visual media (i.e. posters, flyers,	• creative • proficient in modern visual media • willing to communicate with	The Communications and Outreach Officer will be primarily in charge of communicating with external supporters, in

	PowerPoints, website) for advertisement • maintains social media and website	potential supporters • skills in maintaining a website or social media page	addition to the Treasurer. However, they will focus on the advertisement of Smile's project and educating the Tech community about the project and its potential impact
Research Engineer	• Focuses on researching and understanding the problem space and solution effectiveness at the depth of the field. • Drafting majority of proposals and staying in touch with external research experts	• Has an aptitude and desire to do research • Understands how proposals and documentation work • Is open to meet with experts and partners to discuss the direction of the project.	The Research Engineer will focus on keeping the team updated on current research and programs in the problem space. They will meet experts of the problem space in order to maintain Smile's understanding of depression of college students and specifically at Tech. In addition, the Research Engineer will lead the analysis of the application during the testing phase and after it is released for all campus use to determine the app's success and identify potential problems or helpful additions

Timeline

1. Summer 2015:
    a. Find a partner
    b. Prepare a general outline for app
    c. Prepare a form which would be sent to Georgia Tech clubs and organizations, in which they would describe their organization and classify the type of organization
2. Fall 2015:
    a. Begin reaching out to app developers to learn about possibilities of interfaces
    b. Organize submissions from Tech organizations, using them to define specific categories and subcategories
    c. Use these categories to develop an online survey which would be filled out by Tech students who were looking for organizations to participate in

    d. Create algorithm that will select the matching organizations based on the student's survey responses and the descriptions of the organizations
    e. Link app with Georgia Tech so that a student's account will be connected to their submissions to the app
3. Spring 2016
    a. Have the alpha stage of the app released to select Georgia Tech students
    b. Send surveys to students asking for their thoughts about the app at various times throughout the testing period
    c. Develop a compatible website so all organizations can be viewed openly online and survey submissions can also be edited online
4. Summer 2016
    a. Using survey responses, make changes to app to make it more appealing to the students
    b. Send out a request to organizations to update their classification information that was collected during the Fall and Summer of 2015
    c. Develop beta stage of the app
    d. Begin advertisement for app with current and incoming students
5. Fall (or end of Summer 2016 right before Fall semester)
    a. Release beta stage of app for all student use
    b. Attached optional survey to app so that students can send in comments about the app, which would be used for future improvements

Budget

Materials and supplies

This would consist mostly of office equipment such as paper, writing tools and ink. This will be used most likely for printing out flyers or other forms of adverts. Because advertising this application heavily is imperative to our success, and we hope to make it campus-wide, we should allocate around $1500 for this section of the budget.

Equipment

No such expensive equipment is required for our project.

Services

In order to develop the application, we may need to hire an expert in app design and development. The app is database supported (integration between numerous databases i.e. Calendars, Jacket Pages and any other GT database, and personal information). This means about 60-75 hours of professional help to develop the web application. If we want to develop smartphone applications, it should cost in between 150-200 hours for an iPhone application and 175-225 hours for an Android application. At an average rate of $80 per hour for a web designer for the website, this will cost between $4800 and $6000. The iPhone application will cost around $15000-20000 and the android app will be about $17500-22500 to have developed (at the going rate of ~$100 per hour for a professional app developer). It is quite possible that this will cost a lot less, depending on the simplicity of the application, and if it can be developed in a shorter period of time.

Transport

There will probably not be a good deal of travel for the team considering most of the work is web and application development and will most likely stay on campus. Travel itself, if required should not be such a large sum. This transport is included but not limited to: MARTA, the use of any group member's car, and bus fare. For this, for the purpose of one trip, $15 per head should be sufficient (unless we use the car of a group member, in which case the sum will be dependent on the distance travelled and only paid to the owner of the vehicle). Over the course of year 2, assuming we make about 10 off campus trips, it should cost about $750 over the course of the year.

Category	**Cost**
Materials and supplies	$1500
Equipment	$0
Services (minus app development)	$6000
Transport	$750
Total	**$8250**

Expected Outcomes and Future Directions

A reasonable expectation to achieve by the end of this project would be to have established the website as well as the smartphone application and ensure that we have a large majority of incoming students using it.

We would probably aim for, by the end of year 2, to have developed the web application and have it up and running for the incoming class of 2020. In the future it is possible to design the application and have it endorsed by the university the same way that applications such as Jacket guardian are.

Contributions

David Morrison	*Problem, Significance, Why it is Still a Problem, Goal, Objective Two*
Chris Polack	*Stakeholders, Video*
Anugo Mojekwu	*Context and Existing Solutions, Objective Three*
Tristan McPhail	*Objective One, Research Team, Time Line*
Shehryar Haider	*Objectives Four & Five, Budget, Expected Outcomes and Future Directions*

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