ORIGINAL WORK STATEMENT

Project Title: _Knowledge and Utilization of CMU Safe Walk and Escort_

We the undersigned certify that the actual composition of this proposal was done by us and is original work.

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A. Why is this topic interesting? Is there a client for whom you might do the survey?

This question is interesting because the results of this study could provide useful feedback for the administration, which could lead to a change in the way the services are executed and how information about them is disseminated.

B. What question(s) do you propose to study?

What portions of CMU students know about and/or utilize safe walk and escort services and how could we increase both knowledge and utilization of these services?

C. What research has already been done on the topic or on the theoretical construct of central importance to your topic? What could be learned from survey results?

This study examines various campus safety issues at a large rural university, including the perceived safety of students and their use of campus safety features. Females felt less safe than males on campus and were more likely to use escort services. Students living in co-ed dorms felt less safe than males in single-sex dorms. Males walk alone after dark more frequently than females. Females and underclass students used university escort services more frequently than did males and upperclass students. Those who felt safer were more likely to walk alone after dark.
(http://eric.ed.gov/ERICDocs/data/ericdocs2sql/content_storage_01/0000019b/80/15/51/6c.pdf)

Survey on the UC Davis campus Escort Service, focused on finding usage statistics among the student body, and explaining reasons for non-use, and gauging satisfaction with the service.
(http://www.sariweb.ucdavis.edu/downloads/369.2006%20Escort%20Service%20Quick%20Survey.pdf)

This is a survey of college/university campus safety nationwide focusing mainly on the preparedness of campuses to respond to threats. The survey showed that all of the respondents made the safety of their campus a priority. (http://www.nacubo.org/Documents/Initiatives/CSSPSurveyResults.pdf)

This study, though it does not necessarily reflect the safety concerns of the students, shows the financial concerns of the university shuttle service as well as the routes and number of buses the university employs. This will help give us an idea of how feasible changing the escort service could be.
(http://security.mcmaster.ca/documents/shuttle_bus_review.PDF)

D. What population or populations do you plan to sample?

We will sample CMU students both undergraduate and graduate who live both on and off campus and whose names are in the C-Book. Using this book we will randomly select students and search the online directory for their Andrew ID's.

E. To what population do you wish to make inferences?
   • **How does it differ from the sampled population in D?**
   • **What possible sampling and non-sampling errors could arise in the survey that you plan to conduct?**
   • **Explain each possible error, how it could occur, and how you suggest tackling it.**

We wish to make inferences about CMU students both undergraduate and graduate who live both on and off campus. This population includes all full and part time students (including commuters) that live within the geographic area that these safety services cover. Students who live outside of this area are not included in our target population.

This differs from the population in (b) because this population is our target population whereas (b) is our sampling frame. There may be students in our target population who are not included in the C-Book, for example: an exchange student who is only here for the semester. This would be an example of undercoverage. Alternately, there may be students in the C-Book who are not part of our target population, for example: a student who lives outside the scope of CMU safety services. This would be an example of ineligible units.

F. How do you plan to carry out the survey (e.g., by telephone, e-mail) and why?

We plan to carry out the survey using Survey Gizmo (an internet based survey website) and then distribute the survey to a random sample of CMU students selected from the C-Book. The students will follow the link to our online survey and respond. The survey provider will compile all responses and we will download the information.

In an effort to reduce non-response we will send follow up emails to the students who have not completed the survey every four days until those students have received three follow up emails or responded to the survey.

Even with follow up emails there will still be students who have not responded. We expect that the majority of nonresponders will not respond because of a lack of interest in the topic, but due to some outside factor, which causes them not to respond. While we recognize that this could affect biases in our results but we do not predict that the effect will be large.

In the event of a low response rate we would want to argue that the sample we have collected is like a representative probability sample. In order to do this we would need to determine campus demographics and sample demographics (including gender, year in school, and whether they live on/off campus.)

G. What variables do you propose to measure?

We propose to measure gender, year in school, whether they live on/off campus, past experience with potentially dangerous situations (ex: assault/robbery, etc.), knowledge of existence of safewalk/escort, knowledge of how safewalk/escort work, utilization of safewalk/escort, transportation habits (ex: walking alone/in groups, driving a car, etc), interest in the programs and ways to increase usage.

J. How do you plan to protect the privacy and assure the confidentiality of respondents? Talk about data collection, protection, and disclosure.

The survey site that we use will be compiling all of the data for us by taking all of the responses of one individual and putting them into one row in a table. That way, we have no idea who the respondent is. We also do not ask for any directly identifying information in the questionnaire, so our data will not contain any information on the respondent's identity either. We will not be sharing any of this information with anyone outside of the group members and our faculty advisor, and once we are done collecting data, we will destroy our initial list of students to email.

K. Decide on a sampling scheme (e.g., SRS, Stratified random sample, etc.) and explain why you chose it.

Our sampling frame is CMU students whose names are in the C-Book. We will use a random sample where we generate pairs of random numbers where the first number corresponds to a page number (from 1 to n-pages) and the second number corresponds to a student on that page (from 1 to m-students on each page.) We will then take these students' names and search the online directory for their Andrew ID's.

Due to the nature of email surveys, we can expect nonresponse to be an issue. In an effort to reduce non-response we will send three follow-up emails, four days apart, to everyone in the sample. This ensures anonymity since we will not know who has or has not responded to the survey.

Since we are using a random sampling procedure, we expect the sampling frame to be representative of the target population. However, we will still collect demographics to verify that this is true. If we find that our sample is not representative of the target population we will weight the sample population according to known target population demographics which we can access through the CMU website.

you may be able to get the web survey provider to either (a) give you emails of those who have not yet responded, or (b) send reminders directly to nonrespondents without giveing you their identities. this is probably better than irritating responders with reminders.

M. Give some idea of the sample size you will require and how you arrived at this number (talk about the margin of error for inferences you want to make).

According to "A Comparison of Web and Mail Survey Response Rates" the response rate for e-mail surveys is approximately 20%. Given our sampling scheme without replacement and assuming a 95% confidence interval with p=0.5 the margin of error, ME, can be written:

$$\text{ME} = \sqrt{1 - \frac{n}{N}} \frac{z_{\frac{\alpha}{2}} \sqrt{p(1-p)}}{\sqrt{n}} = \sqrt{1 - \frac{n}{N}} \frac{1.96\sqrt{.5(.5)}}{\sqrt{n}}$$

where n is the sample size, and N is the population size. Thus, n can be written:

$$n = \frac{\beta N}{N(ME)^2 + \beta}$$

$$\beta = z_{\frac{\alpha}{2}}^2 p(1-p) = 1.96^2[.5(.5)] = .9604$$

According to the Carnegie Mellon website there are 5,951 undergraduate students and 5,420 graduate/doctoral students. Thus, N=11,371 undergraduate and graduate/doctoral students. After experimenting with various sampling errors, we decided that a sampling error, ME, of 5% was the most reasonable as it would yield an n=372 students.

$$n = \frac{(.9604)(11371)}{(11371)(.05)^2 + .9604} = 371.606 \rightarrow 372$$

Therefore, taking into account the 20% response rate for e-mail surveys, we would need to e-mail 1860 people.

Questionnaire: Knowledge and Utilization of CMU Safe Walk and Escort Services

What is your gender?
_____Male
_____Female

What year in school are you?
_____First Year
_____Second Year
_____Third Year
_____Fourth Year
_____Fifth Year
_____Graduate Student

What is your home college?
_____Carnegie Institute of Technology
_____College of Fine Arts
_____College of Humanities and Social Sciences
_____Heinz College
_____Mellon College of Science
_____School of Computer Science
_____Tepper School of Business
_____BXA

The Carnegie Mellon community has several transportation options for students. Which of the following programs have you heard of? Check all that apply.
___Safewalk
___CMU Escort
___CMU Shuttle
___I have not heard of any of these programs

Which of the following programs have you used at least once during your time at Carnegie Mellon? Check all that apply.
___Safewalk
___CMU Escort
___CMU Shuttle
___I have not used any of these programs

This school year (August '09 – Present), how often do you use the following services, on average?

	Daily	*Weekly*	*Monthly*	*At least once this year*	*Never*
Safewalk	O	O	O	O	O
CMU Escort	O	O	O	O	O

If you rarely or never use Safewalk services, why not? Check all that apply.
___I've never heard of Safewalk
___I don't know how Safewalk works

___I live too far away (outside of the service area)
___I don't mind walking alone
___I always walk with friends
___I don't walk to and from campus
___Other (please specify) _____

If you rarely or never use CMU Escort, why not? Check all that apply.
___I've never heard of CMU Escort
___I don't know how CMU Escort works
___I live too far away (outside of the service area)
___I don't mind walking alone
___I always walk with friends
___I have other transportation (car, PAT bus, etc.)
___Other (please specify) _____

How comfortable are you walking across campus by yourself after dark (please circle)?

| Extremely uncomfortable | Somewhat uncomfortable | Somewhat comfortable | Extremely comfortable |

How comfortable are you walking off-campus by yourself after dark?

| Extremely uncomfortable | Somewhat uncomfortable | Somewhat comfortable | Extremely comfortable |

If you have been to the Safewalk or CMU Escort websites, how useful was the information on those sites?

	Not at all useful	*A little bit useful*	*Moderately useful*	*Extremely useful*	*I have not been to the website*
Safewalk	O	O	O	O	O
CMU Escort	O	O	O	O	O

We are interested in how much you know about Safewalk and Escort services. For each of the following questions, please answer to the best of your ability. Then indicate how confident you are that your answer is correct. Do not ask anyone for help or look up the answers.

On what days does Safewalk operate? Check all that apply.
___Sunday
___Monday
___Tuesday
___Wednesday
___Thursday
___Friday
___Saturday

> How confident are you that your answer above is correct?
> ___I am sure this is the right answer
> ___This is my best guess
> ___I have no idea what the correct answer is

During what hours does Safewalk operate?
_____p.m. until _____a.m.

> How confident are you that your answer above is correct?
> ___I am sure this is the right answer
> ___This is my best guess
> ___I have no idea what the correct answer is

How do the Safewalk volunteers know to come pick you up? Check all that apply.
___You stand at specified pick-up points around campus, and they will pick you up as they make rounds
___You call Safewalk and they will come pick you up
___You go to Safewalk headquarters and ask them to walk you home

> How confident are you that your answer above is correct?
> ___I am sure this is the right answer
> ___This is my best guess
> ___I have no idea what the correct answer is

Where is Safewalk headquarters? _____

> How confident are you that your answer above is correct?
> ___I am sure this is the right answer
> ___This is my best guess
> ___I have no idea what the correct answer is

On what days does CMU Escort operate? Check all that apply.
___Sunday
___Monday
___Tuesday
___Wednesday
___Thursday
___Friday
___Saturday

        How confident are you that your answer above is correct?
        ___I am sure this is the right answer
        ___This is my best guess
        ___I have no idea what the correct answer is

During what hours does CMU Escort operate?
_____p.m. until _____a.m.

        How confident are you that your answer above is correct?
        ___I am sure this is the right answer
        ___This is my best guess
        ___I have no idea what the correct answer is

How does the CMU Escort know to come pick you up? Check all that apply.
___You stand at specified stops around campus, and they will pick you up as they make rounds
___You call the Escort number and they will come pick you up
___You go to Escort headquarters and ask them to drive you home

        How confident are you that your answer above is correct?
        ___I am sure this is the right answer
        ___This is my best guess
        ___I have no idea what the correct answer is

Where do you live?

___Morewood Ave. dorms [Mudge, Stever, or Morewood Gardens/E Tower]

___Greek Quad

___Margaret Morrison Street [Roselawn Terrace, Woodlawn Apartments, Boss, McGill,   Hamerschlag, Donner, Welch, Henderson, Scobell, Greek Housing, Margaret Morrison   Apartments, Spirit House, Tech House]

___Oakland campus housing [Fairfax, London Terrace, Shirley, Shady Oak, Veronica, Webster,   Neville Co-op]
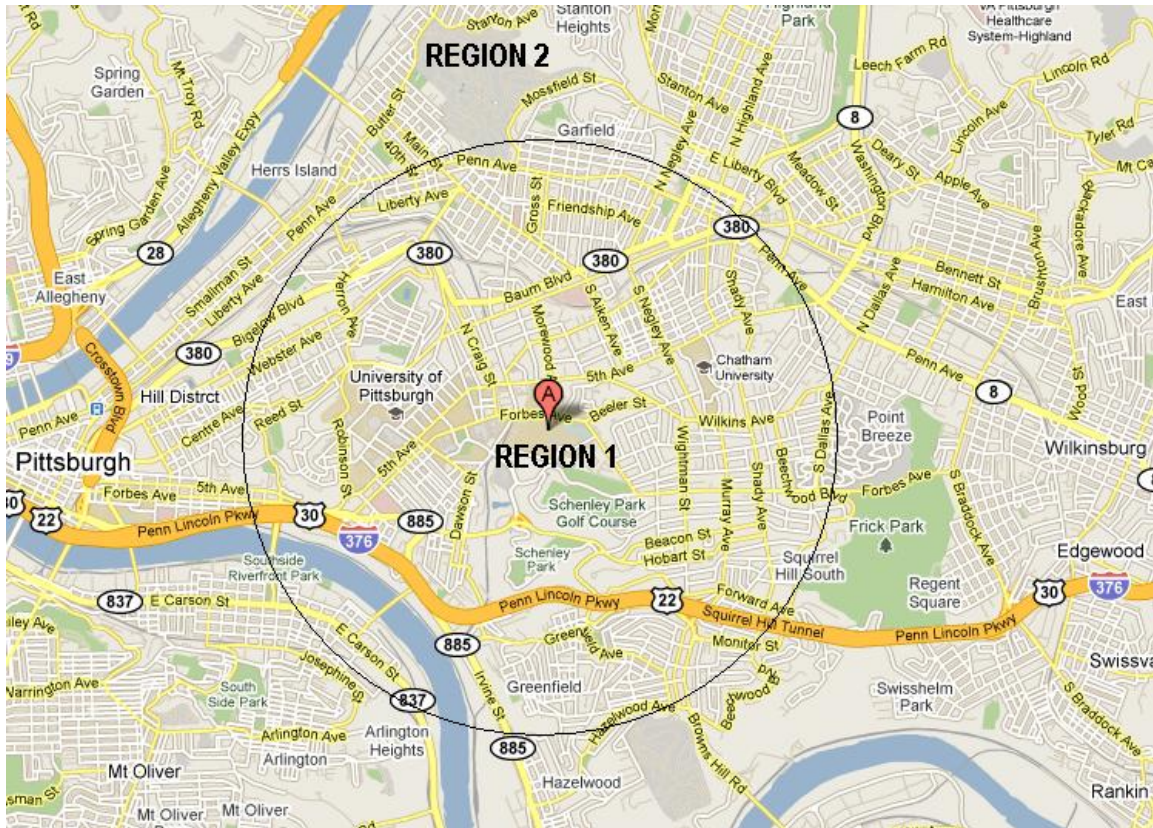
___Doherty Apartments

___West Wing/Resnik

___Other, off-campus (Please look at map below and specify region) _____

Will Safewalk drop you off at your current residence?   Yes   No   I don't know

Will CMU Escort drop you off at your current residence?   Yes   No   I don't know

Please read the following information about Safe Walk and CMU Escort services, and then answer the final four questions in the survey.

SAFE WALK
- **Student volunteers will walk you to campus and Oakland house communities**
- **Operates nightly from 10p.m. until 2 a.m.**
- **To request an escort:**
    - **Call 412-268-SAFE (x8-7233)**
    - **Visit headquarters (in the lower level of the UC, by the TV near the package pick-up window)**

CMU ESCORT
- **Escort shuttle drives you from designated pickup locations to anywhere within a 1.5 mile radius from campus**
- **Operates daily from 6:30p.m. to 6:30 a.m.**
- **To be picked up, wait at one of the following locations:**
    - **Morewood Gardens (E-tower parking lot)**
    - **Hamburg Hall**
    - **University Center (Forbes Avenue in front of building)**
    - **Margaret Morrison Plaza (MM Storefronts)**
    - **GSIA/Tepper School of Business (at the corner of Tech & Frew streets)**
    - **Porter Hall (lower Frew Street exit)**
    - **Mellon Institute**
    - **SEI - Rear entrance on Heanry St.**
    - **4616 Henry Street (INI)**
    - **300 South Craig St.**

If you live in off-campus, non-university housing, how likely would you be to utilize Safewalk if it brought you to your current residence?

Extremely unlikely	Somewhat unlikely	Neither likely nor unlikely	Somewhat likely	Extremely likely	I live in campus housing

If you have never used CMU Safewalk, what might make you more likely to use it?
___Having more easily-accessible available about how to access Safewalk (e.g. a more user-	friendly website)
___Having more visible information about how to access Safewalk (e.g. posters with Safewalk hours and access information posted around campus)
___If the service area were extended
___Other (please specify) _____
___I would never be interested in using the service

If you have never used CMU Escort, what might make you more likely to use it?

___Having more easily-accessible available about how to access Escort services (e.g. a more   user-friendly website)

___Having more visible information about how to access CMU Escort (e.g. posters with Escort   hours, stops, and access information posted around campus)

___Having more frequent service

___If the service area were extended

___If Escort would pick you up anywhere within the service area

___Other (please specify) _____

___I would never be interested in using the service

How comfortable would you be walking home with the following combinations of Safewalk escorts (assume that you don't personally know either person). Please check one box per row.

	Extremely uncomfortable	Somewhat uncomfortable	Somewhat comfortable	Extremely comfortable
1 male				
1 female				
2 males				
2 females				
1 male and 1 female				

Sampling Process

We will divide up and have each group member come up with around 475 students randomly and put their Andrew ID's into a spreadsheet. We will then compile all of our spreadsheets, eliminate duplicate students and then we will use an emailing macro in order to send an email out to each student in the spreadsheet.

Data Collection and Analysis Plan

Our survey site will collect all of the data for us and compile it. Thus, analysis will only need to take place on those responses that are open-ended. Once we have sent out a final reminder to all subjects, we will then go through the compiled data and draw the appropriate conclusions based on graphical as well as numerical analysis. We would like to analyze how much information students actually know regarding both SafeWalk and Escort, and we will predominately look at the data with regard to gender and year in school.

Proposed project schedule including pilot testing of questionnaire

We have already carried out a pre-test of our questionnaire, so that has been taken care of. By the end of the first week after spring break, we will have a list of all subjects to satisfy our sample size and we will send out the first round of emails. This will give us the opportunity to send out three reminders by the time the first check-point on data collection and analysis is due. As results come in, we will check the survey results and start analyzing the data in order to get a sense of what some of our results may be as we get more and more subjects to respond. This will give us time to prepare a draft of our final report by April 6th, and then have our final report ready by April 30th.

Sources:

http://www.stat.cmu.edu/~brian/303/week03/mail-vs-email.pdf
http://www.cmu.edu/about/fastfacts.shtml
http://www.cmu.edu/police/shuttleandescort/
http://www.studentaffairs.cmu.edu/student-life/safewalk/
http://www.cmu.edu/ira/factbook/pdf/facts2010/factbook_webversion_entirebook_feb2520102.pdf