According to the National Coalition against Domestic Violence, intimate partner violence accounts for 15% of all violent crime with nearly 20 people being physically abused per minute. MCV’s Forensic Nursing unit is dedicated to helping victims of domestic violence by providing medical care and information. Unfortunately, they are only involved after people have been victimized. The hospital is seeking preventative measures to thwart partner domestic violence and decrease the number of abuse victims that require medical help.

This project seeks to facilitate MCV’s efforts to help abuse victims outside of the emergency room. In order to do so, a stealth device able to call for help in times of emergency will be developed. Due to the nature of partner violence, the device will also be a stealthy one so as not to attract the abuser’s attention and can be surreptitiously used.

There are devices currently on the market, such as the Revolar, that are able to call for help. Such devices rely on outside communication devices such as smart phone to send out alerts and are not stealthy. Unfortunately, smartphone connected devices can easily be detected and can possibly be a source of more abuse. The need for smartphones also excludes those of lower socioeconomic status who simply cannot afford them.

Unlike the Revolar, the stealth device will cater specifically to those in abusive situations. It will be a small, cheap, standalone device that can be placed in any item. One’s socioeconomic status will not play a factor in receiving help. The device can also be placed in items such as feminine hygiene products that will not draw the abuser’s attention. The device will utilize long range and low power communication chips to send out alerts to first responders in an emergency.

Along with the noble cause, it is also a great business opportunity. According to the National Coalition against Domestic Violence, victims of intimate partner violence lose a total of 8.0 million days of paid work each year and the total cost exceeds $8.3 billion per year. This device could not only help in times of emergency but can help with the victim’s livelihood. This device can also help law enforcement agencies as it can be utilized to help in the fight against human trafficking, kidnapping, and muggings. It can also be used by the average person who may fall victim to robberies and other crimes of opportunity.

The market for a stand-alone device such as this one is untapped. It could be used by every woman, man, and child concerned about safety. The stand-alone SOS device would be one of a kind. If marketed properly, not only could it turn into a successful business but it could also revolutionize how first responders reach those in need.
Team Members:

1. Name: Ruth Mahteme, ECE
   Email: mahtemers@mymail.vcu.edu
   Phone: (703) 568-0191
   Signature: 

2. Name: Spandan Fadnis, ECE
   Email: fadniss@mymail.vcu.edu
   Phone: (804) 245-4894
   Signature: 

3. Name: Samuel Lian, ECE
   Email: liansu@mymail.vcu.edu
   Phone: (804) 728-7688
   Signature: 

4. Name: Kristie Cooley, School of Business
   Email: coonleykw@mymail.vcu.edu
   Phone: (540) 383-7666
   Signature: 

5. Name: Taylor Lamb, School of Business
   Email: lambtr@mymail.vcu.edu
   Phone: (804) 296-6889
   Signature: 

Faculty Advisor:

Ruixin Niu, Ph. D
Associate Professor
Department of Electrical and Computer Engineering
Virginia Commonwealth University
Email: miu@vcu.edu
Tel: (804) 828-0030

Signature: 