Briefly Describe the Technology Innovation:

Up to 500 words describing the technical innovation that would be the focus of a Phase I project, including a brief discussion of the origins of the innovation as well as an explanation as to why it meets the program's mandate to focus on supporting research and development (R&D) of unproven, high-impact innovations.

Response:

BedMED is a virtual training simulator aimed at giving in-service and pre-service nurses access to a platform for developing their bedside manner. Bedside-manner is defined as the way that healthcare professionals interact with their patients. Patient interactions can often influence what can be an incredibly tumultuous time for individuals and their loved ones. The actions of healthcare professionals through bedside-manner can result in the highlight of a trip to the hospital or added stress to an already stressful experience. FuturUX is proud to partner with Auburn University to develop a new platform, BedMED, which will be used to enhance the training of nurses in relation to bedside-manner.

Our team has conducted literature reviews that revealed bedside-manners are not explicitly taught in nursing schools. We have also taken part in a regional I-Corps where we found that nursing administrators do not have a way to remediate in-service nurses with poor bedside manner. From the I-Corps we also found that nursing students did not feel well equipped to interact with patients and wished they had more training and experience with these interactions.

This research will involve examining the development of bedside-manner in pre-service nursing students. In addition, exploring a "real" definition of bedside-manner would be beneficial for doctors, medical students, residents, and other medical professionals. As a result of researching bedside-manner and what it entails, we will be able to better understand the skills and capabilities which are essential to obtain. This will help inform universities and medical institutions on ways to acquire better practices and capabilities. Our research includes two goals: to study and define good bedside-manner and to improve interpersonal care between patients and nurses.

BedMED aims to integrate Virtual Reality, Artificial Intelligence, and speech-to-text technology into a holistic environment providing nurses with various interactions in several disciplines (e.g., Emergency, Post-Operation, Newborn ICU, etc.) designed to develop their bedside manner. This is accomplished through realism, immersion, and gamification. Users will interact with a

simulated patient and be graded on several criteria, receiving a score at the end of each interaction along with critiques to improve their bedside-manner.

Simulation has proven to be an effective way of teaching hard skills such as flight simulation for pilots learning new aircraft control systems. We aim to apply this proven technology to soft skills and see measured improvements in nurse-patient interactions.

Briefly Describe the Technical Objectives and Challenges:

Up to 500 words describing the R&D or technical work to be done in a Phase I project, including a discussion of how and why the proposed work will help prove that the product or service is technically feasible and/or significantly reduce technical risk. Discuss how, ultimately, this work could contribute to making the new product, service, or process commercially viable and impactful. This section should also convey that the proposed work meets definition of R&D, rather than straightforward engineering or incremental product development tasks.

Response:

- Playtesting before VR development with Auburn University nursing students as well as other target groups
- Realistic interactions for modeling and immediate responses resulting from research with the target groups
- AI engine for the purpose of evaluating the user's words and actions to give immediate responses for improvement
- Alpha product and testing to verify effectiveness and improve the product based on results
- This product will give target groups the ability to learn and improve their bedside-manner, thereby increasing their skillsets and ability to remain on the job while also positively impacting the patient's experience

Briefly Describe the Market Opportunity:

Up to 250 words describing the customer profile and pain point(s) that will be the near-term commercial focus related to this technical project.

Response:

- Nursing faculty and students
    - Students do not feel prepared to interact with patients, wish they had more practice
    - Few ways to have students practice bedside-manner
    - No VR immersive solutions exist where nurses do nursing things while interacting with patients
- Hospital administrators
    - No way to remediate nurses with poor bedside-manner
        - Typically moved around until nurse quits
- Product easily be adapted to fit customer service and other soft skill focused occupations
- Beside-manner is not currently emphasized in the nursing curriculum, despite the fact that administrators and industry professionals agree it is a critical part of their daily patient interactions

Nursing schools and hospitals have begun implementing virtual reality systems into their day-to-day operations. BedMED will dramatically reduce the cost required to include virtual reality programs in their curriculum. BedMED will help to combat the challenge of training an ever-increasing number of medical students.

Briefly Describe the Company and Team:

Up to 250 words describing the background and current status of the submitting small business, including team members related to the technical and/or commercial efforts discussed in this Project Pitch.

Response: if we could all write our own blurb that'd be great

- Wesley Monnette: Co-PI and CEO of FuturUX, a software development firm that specializes in VR and user interface/ user experience development
    - Laid groundwork for project while completing undergrad degree from 2019-2020
    - Specialized in UI/UX and VR game development while completing degree at Auburn University
- Dr. Jakita Thomas: Co-PI and Philpott-WestPoint Stevens Associate Professor at Auburn University. Specialized in researching healthcare, complex cognitive skill development, game development, and Algorithmic Thinking
- Gary Pike: Graduate Research Assistant at Auburn University. Former Product Designer at Apple, Auburn Dean's List student, expertise in management, marketing, and engineering
- Dr. Amy Curtis: Doctor of Education, practicing nurse, and assistant clinical professor at Auburn University. Specialized in researching simulation-based education (subject matter expert)
    - What is her official relationship to us?