

Virtual Reality: How to disrupt the traditional pre-med pathway

Strategic Plan Theme: Student Success

Funding Level: Between \$1-5 million

Facility Needs: No new facilities will be needed

Submitting Unit: Office of K-12 Outreach, College of Education

Collaborating colleges/departments/units involved with this proposal.

Office of K-12 Outreach (College of Education), College of Osteopathic Medicine

What is the proposal's big theme or idea?

Using Innovative Technology to Address Critical Need in Healthcare The technological advancements of the 21st century have transformed our lives in ways that were once unimaginable. Leveraging the broad capabilities of virtual reality and the expansion of the metaverse, we are on the precipice of transformational growth and the potential for exponential potential for learning. Our proposal will bring the power and promise of virtual reality and place it into the hands of those who wish to enter the healthcare profession. This opportunity will usher in a new pathway for current university students to become future medical professionals who will transform lives through unique skills, knowledge, and unparalleled compassion. This proposal creates a framework that will increase the number of students who enter the field of medicine and is designed to engage with and empower first-generation and students of color to embrace the field of medicine as a career pathway.

This proposal will recruit, support, and mentor students who wish to enter the healthcare profession. Through the development of virtual content, content that introduces students to vitally important, but challenging patient care (e.g., taking patient vital signs, blood draws, removing sutures, or supporting IV procedures) we will be able to provide a unique lens into patient care through virtual experiences. Our efforts will include content development that utilizes virtual reality to provide recruitment tools, early course practice with critical skills for patient care, and ultimately, embedded virtual reality programming into the entire course trajectory for students. Each of these components will support the development and support of a platform for learning that will empower students to practice, hone critical skills, and receive real-time feedback in a safe, low-risk environment.

We are now on the precipice of a new era, an era where immersive technology will transition the student learning experience away from static models to fully virtual experiences where students will see first-hand how to save lives. In real-time, students will be able to see how their knowledge and skills create the space to heal. We will use virtual reality to recruit potential nurses and doctors who will one day change the lives of their patients through critical and compassionate care.

What is the proposal's goal?

The overarching goal of this proposal is to increase the number of first-generation students and students from historically marginalized communities who choose a course of study that leads to a career in medicine. Utilizing the capability of virtual reality programming and hardware, this project will give students the ability to experience real-life medical procedures. By using virtual reality as the platform that introduces students to the field of medicine, we will be able to help interested students see medicine as an opportunity and not as a daunting, overwhelming course of study. This program, when implemented will provide points of access to all students beyond just physical environments, making a career in medicine within the grasp of each student.

Define the significance, or impact of your big idea.

The program can redefine what it means to be a pre-medical student. While most pre med programs continue working with textbooks and dummies, the time is now to integrate virtual reality with the content expertise. Through the development and implementation of a virtual reality component to the curricula, we will set the stage for MSU students to have first-hand experiences that allow students to receive real-time, critically important feedback as they develop their craft as medical professionals. In the short-term, this program will create incredible spaces of growth for students. In the broad scope of opportunity, the integration of virtual reality content into curriculum will change the entire experience of learning for students. We will be on the cutting edge of the new paradigm of learning. This program will partner content with virtual experiences, experiences that enable capability, and capability produces positive outcomes. This program will be a launch pad that shows the viability and impact of virtual reality for student growth.

Who will be impacted?

This proposal will have a positive, and substantial impact for both students and academic teams. For students, this proposal will provide increased opportunities for students to interact with content through an enticing platform that provides real-time interaction with healthcare practices. The virtual reality component of this proposal will greatly increase undecided freshman and sophomore student exposure and interest in the medical field. This will also create opportunities for recruitment by faculty and the College of Osteopathic Medicine. For academic teams, this proposal will supplement traditional instructional practices and infuse virtual reality into the curriculum. In concert with content adjustments, educators and educational programs of study will receive comprehensive support in the development of virtual reality content and use. Similarly, the healthcare industry in Michigan will benefit from a more purposeful talent development program. In addition, through the advancement of virtual reality as a tool to improve instruction and retention of information, Michigan State University will become a destination for faculty who are inspired by the vast potential for virtual reality.

What does sustainability for your proposal look like?

Over time, each of the partners in this effort will each contribute to sustainability in several ways. First, through this grant program, partners will develop a robust program that recruits and engages a group of diverse students at Michigan State University. The partners will make every effort to create productive processes that facilitate student participation. Second, the partners will simultaneously develop content that enhances program experiences and contours to students' learning needs and future plans. Through these two efforts—recruitment and program development—program partners will construct an exemplary program that has a clear approach to recruiting, involving, and educating students and providing an overall excellent experience. This excellence will be the cornerstone of sustainability. Furthermore, program partners will develop networks and seek funding sources that enable the continued development and improvement of content and implementation efforts, particularly from industry partners to help sustain as they begin to see a more robust pipeline of employees. This will include public and private grants and may also include the monetization of the content over time for medical providers who wish to develop new training modules within their facilities. Finally, program partners will seek the continued support from the Michigan State University for sustained program support. As Michigan State University continues to deliver on its mission as a land grant institution, the combined efforts of the Office of K-12 Outreach, the College of Osteopathic Medicine, and the Great Lakes Reality Labs, we will create opportunities for students across the Michigan State University campus.