Submit Grant Proposal | VR@Illinois

Submitted by:
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1. Name
William Sullivan

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3. Your Status
Faculty

4. Your Department
Landscape Architecture

5. Provide a brief summary of the VR/AR project that would be funded by this grant proposal

We have good evidence that exposure to urban nature helps individuals recover from stress and mental fatigue. We have very little knowledge, however, about the duration of exposure to nature that is necessary to produce these results. We also do not know how these findings vary among people from different cultures and landscape types associated with cultures. This research uses VR delivered through Oculas Quest to address these gaps in our knowledge. In this study, we use carefully edited 3-D videos of urban landscapes that vary in the density of vegetation they contain. We are capturing images of multiple settings in Champaign-Urbana, Taipei, Taiwan, and Ching-Mai, Thailand -- landscapes that differ not only in soil and climate conditions but that have also been shaped by the cultures of the people that inhabit those places. 135 individuals from our campus, National Taiwan University, and Ching-Mai University will participate in this research. These individuals will engage in stressful and mentally fatiguing activities while their stress levels are measured. We will also test their capacity to pay attention before and after engaging in these activities. After the initial measurements, participants will engage the various landscapes via VR through the Oculas Quests. After engaging in the VR, we will test their capacity to pay attention again and continue to monitor their stress levels.

6. How much funding are you requesting?

$4,360.19 is our request.

7. Provide a brief preliminary budget of how the funds would be used

These funds will be used to support a 25% PhD student as a research assistant for one semester. That's ten hours per week for 4.5 months at College of Fine and Applied Arts pay levels. I will supplement this funding with money from other sources to support this student for the remaining 7.5 months during the year we expect it will take to carry out this project.

8. Describe the anticipated outcomes of your project.

We anticipate that we will be the first lab in the world to use VR to address the questions posed above. It would be tremendously expensive (really impossible) to pay for people in these three countries to travel to research sites so that we could measure the impact of various landscapes on people from different cultures. With VR driven through the Oculas Quest, we can shoulder the cost of travel and present compelling VR experiences to research participants at a tiny percent of the cost of having research participants travel. We anticipate that longer durations of exposure to these landscape will result in greater recovery from stress and mental fatigue. We don't really know the extent to which culture will play a role in the outcomes. Thus, the questions about culture in this research are really exploratory and whatever we find will be useful, helpful, and noteworthy.

9. What is the proposed timeline for your VR project?

We will make the baseline videos while during September and October, 2019. We have already submitted the required IRB application to the Campus Research Board. We will collect data from participants at the University of Illinois, National Taiwan University, and Ching-Mia University in Thailand January through June, 2020. We will analyze the data and write up the findings for publication during the fall semester of 2020.

10. Additional information

Our group is has been successful at carrying out landscape research in the US and Taiwan. We are the most cited scholars in the field of Landscape Architecture and suspect that the research papers that result from this work will gain significant attention nationally and internationally.