Bodies In Motion

Kohler Fellows Project: Vaidehi Patil & Lauren Gerlowski
Cultivating Connections, Wisconsin Institute of Discovery, April 12, 2023

WISCONSIN INSTITUTE FOR DISCOVERY

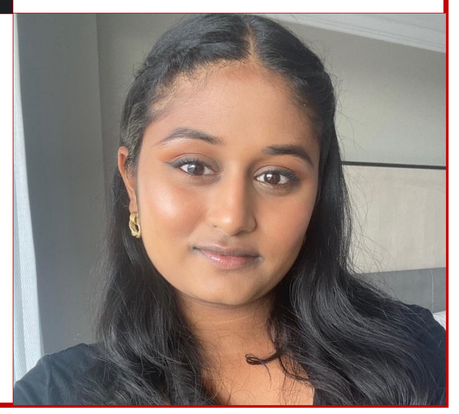
Kohler Fellows@WID

This performance is created by the Kohler Fellows: Vaidehi Patil (PhD Student) & Lauren Gerlowski (PhD student and choreographer). Lucy Pierson, a dancer based in Chicago, is a key performer in this project. We are gratefully working in combination with PhD student Kieran Nichols who is part of the BADGER Lab to use sensor technology.

This is an **art-science fusion project**. Instead of centering how art can communicate science, we are centering how art can use science to create an interesting visual and as an educational tool. By pairing dance and sensor technology we are pairing two distal mediums: one that uses only the body to create art and the other that correlates body movement to light. By putting these two opposing mediums together and having them each do the same amount of work in the performance, we see how art and science can use each other. Our use of technology and movement will create a light show that will be visually appealing and informative to the audience.

Lauren Gerlowski
Art Fellow

Veda Patil
Science Fellow



UW BADGER Lab

Biomechatronics, Assistive Devices, Gait Engineering & Rehabilitation

Collaboration with BADGER lab

The **Biomechatronics, Assistive Devices, Gait Engineering and Rehabilitation Laboratory** at the University of Wisconsin – Madison (**UW BADGER Lab**) applies scientific and engineering principles to promote quantitative assessment, restored function, and physical recovery after orthopedic or neurological injury. They design lower-limb prostheses, wearable sensors, and rehabilitation robotics to compensate for lost function due to impairment.

The **Xsens System** is a motion capture suit that translates movement into different variables such as centre of mass and joint angles to output performance, wellness and injury data. This data can then be used to assess individuals with injury or disabilities along with the performance of prosthetics to ensure efficacy.

The Performance

Our project uses the **universal language, dance,** to create an art-science fusion! We use modern dance movements to create an art-work based on momentum. Audience members are encouraged to lean into the ephemeral moment of the dance and find their own stories within the performance. This dance is choreographed by Lauren Gerlowski and performed by Lauren Gerlowski & Lucy Pierson. The music is by Coldplay.

Xsens motion capture software will capture **center of mass data** (the point at which weighted relative position of distributed mass is zero – or simply the point at which an object will be balanced if you rested it on your fingertip). This tells us about how the body is positioned in space as it moves. We then use this data to correlate it to **LED light color and intensity** where these lights will enhance the dancers' performance! This is done by collecting the dancer's data in real-time, the direction in which center of mass moves is assigned a color and the intensity. The directions include vertical and horizontal movement. The audience will participate in a short experiment wherein they guess what color and intensity of the lights represent with respect to change in center of mass!