**Sarah Lukes**
**Founder, CEO**
**Agile Focus Designs**
**Bozeman, Montana**

**Biography:** Sarah's 11th grade Chemistry teacher encouraged her to do a high school summer internship at the University of Wyoming. There she spent a summer designing and building a cable hexapod flight simulator. It instilled a passion for the creative process of mechanical/electrical engineering design, as well as a commitment to bringing visibility to professional opportunities for rural students. She went on to attain an undergraduate degree in mechanical engineering and a PhD in electrical engineering, both at Montana State University. Upon graduation, Sarah started Agile Focus Designs to bring high-tech imaging advancements to large industries like semiconductors and pharmaceuticals. Her diverse background includes working in orthopedics/radiology, cardiovascular stents, and lidar/cryogenics at the Mayo Clinic, Boston Scientific, and S2 Corporation, respectively.

**Workshop:** *Discover How Light is Used in Technology* - As artificial intelligence tools become more popular, they are increasing the demand for computing resources. For instance, it's estimated that ChatGPT currently costs more than $700,000 a day to run. Historically, computing has been done electronically with transistors and wires. One potential alternative is to use light (i.e. photons) for computing. Technology utilizing light or photonics also includes lidar for autonomous vehicles, displays in smartphones, surgical imaging systems, and augmented or virtual reality systems.

This workshop will introduce the concept of light and waves through several experiments. We will heat chocolate in a microwave to observe an imprint of the electromagnetic wave. We will measure the length of the wave to calculate the speed of light. Other experiments will demonstrate how light used in technologies impact our lives every day.