Smith Bio March 2019

In 2000, Smith obtained undergraduate degrees in physics and mathematics from Gustavus Adolphus College located in St Peter, Minnesota. While there, he performed experimental research in dynamic light scattering.

2000-2006 Smith was a PhD student at the University of Oregon, working with Professor Michael Raymer. During this time, he developed experimental methods to characterize the transverse spatial state of single photons and the theory of photon wave mechanics.

2007-2009 Smith was awarded a Royal Society USA Postdoctoral Research Fellowship, which funded his work on controlled photonic quantum state preparation and manipulation, quantum measurement characterization, and quantum-enhanced sensing at the University of Oxford, working with Professor Ian A. Walmsley.

2009-2010 Smith was a Senior Research Scientist at the National University of Singapore where he worked on integrated quantum photonics, and quantum-enhanced sensing.

2010-2016 Smith was Associate Professor of Experimental Quantum Physics in the Department of Physics at the University of Oxford, where he founded the Optical Quantum Technologies research group.

2016-present Smith returned to the University of Oregon in 2016 as Associate Professor of Physics.

Smith's current research interests lie in the general areas of quantum optics and quantum technologies and their use in probing fundamental quantum physics and realizing quantum-enhanced applications with performance beyond that possible with classical resources. In these fields he has developed approaches for producing non-classical states of light with well-defined mode structure based upon engineered nonlinear optics, methods to coherently manipulate such quantum states, and efficient means to measure the resultant states. Recently his efforts have focused on harnessing the temporal-spectral mode structure of light to enable realization of larger quantum systems. These quantum-optical tools have enabled him to examine fundamental questions in quantum physics, such as the commutation relations for creation and annihilation operations, and experimentally address various quantum-enhanced technologies, for example quantum-enhanced sensing and quantum communications.