Photonic quantum technologies have potential applications including secure communication, high sensitivity measurement, quantum simulation and quantum computing. As the vast majority of the optics that underlie many of these quantum technologies is classical, advances in classical integrated photonics and its supporting ecosystem can be leveraged for quantum applications. Our approaches for component and system level modelling involve using mature classical simulation tools, complimented by quantum models. In this workshop, we'll discuss some of our current and longer term methodologies and provide hands-on opportunities to work with our software to model both components and systems for quantum applications.