

## Enabling a Scalable Photonic Design Model

John Ferguson  
Mentor, a Siemens Business  
John\_ferguson@mentor.com

### Abstract –

In many ways, today's photonic design methodologies look very similar to the IC design approaches of 20-30 years ago: design innovation is focused primarily on component design. Since that time, the IC industry has transformed itself, largely through Moore's Law and the Fabless Revolution, to the point where design innovation relies less on device or component design and much more on designing innovative and appealing applications through the way that they use and integrate pre-characterized components. While Moore's Law does not physically apply to the photonics realm, by leveraging the key concepts that enabled Moore's Law in the IC space, we may be able to replicate similar design scaling in the photonics space. In this presentation, we will discuss the key innovations in foundry, EDA and design needed to enable such a flow as well as provide a current snapshot of the latest enablements today along with what is still needed moving forward.

### Bio –

John Ferguson is Director of Marketing for the Calibre DRC product line at Mentor, a Siemens Business, in Wilsonville, Oregon. He received a BS degree in Physics from McGill University in 1991, an MS in Applied Physics from the University of Massachusetts in 1993, and a PhD in Electrical Engineering from the Oregon Graduate Institute of Science and Technology in 2000. He has worked extensively in the area of physical design verification. Holding several patents, he is also a frequent author in the physical design and verification domain. Current activities include efforts to extend physical verification and PDK enablement for 3DIC design and Silicon Photonics.