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Abstract for an Invited Paper  
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**George E. Pake Prize Talk: Silicon:Germanium's Road to Market; A Sceptic's Guide From Surface  
Science to WiFi**  
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There is an adage that goes, "Believe none of what you hear and only half of what you see." Though this overstates matters just a bit, it is nonetheless a valuable insight, as much of the success in developing and commercializing silicon;germanium(Si:Ge) technology was derived from the suspension of core scientific "truths" in favor of rigorous examination of their origins. In this talk I will review a series of foundational discoveries regarding the inception of growth for Si:Ge alloys that ultimately led to the pervasive deployment of this technology. Inextricably linked to the success of this work was a diverse team of extraordinarily talented individuals who each contributed remarkable insights at critical junctures, a valuable reminder of the potential of collaborative innovation to produce seminal discontinuities in science and technology. I will trace the evolution of collaborative innovation from this nucleus to a foundational business model by which much of current silicon technology is derived.

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