



**Graduate Seminar (EEL 6936)**  
**Department of Electrical Engineering**

**Dr. David Seeger**

President, IMAPS Packaging Society  
Friday, September 27<sup>th</sup>, 2013, 12:55-1:55 p.m.  
Chemistry Building, Room 111 (CHE 111)

**Impact of Packaging on Data Centers**

**Abstract**

The packaging community prides itself on providing state-of-the-art materials and packages to ensure that server chips are cooled effectively, thereby improving server performance. However the heat dissipated by these packages gets dispersed throughout the data center (DC). Now given the ever increasing demand for IT services, increased heat dissipation of high performance chips, and the high level of packaging density available today (e.g., blade servers), the impact on residual heat in the DC is driving the need to incorporate more efficient cooling resources. Indeed, such technologies for optimizing DC cooling can also be considered as “green” technologies. In fact these solutions are not just good for the environment, but are also necessary to enable DC's to operate reliably since the average temperature within the DC can affect server reliability. Hence this talk will detail modern DC's and also describe the technologies that enable their operation. In addition, the future market outlook for this area in the coming years will also be discussed.

**Biography**



David Seeger recently retired from IBM Research after over 30 years of service. He spent the majority of his career in semiconductor process research and development. His initial specialty was in micro-lithography after which he managed departments in semiconductor processes including reactive ion etching, electroplating, chemical mechanical polishing, etc. He formed a team that utilized these processes in the development of MEMs technologies for wireless communications applications, which also involved working with Professor Thomas Weller at USF. He followed this by leading the IBM Research team in electronic and optical packaging. Following a temporary assignment at the Semiconductor

Research Corporation in North Carolina, he returned to IBM's Research division and became involved in a number of green technologies. This included a role as a project manager for a DOE sponsored project in Green Data Center Technologies.