

**DANIEL J. EPSTEIN DEPARTMENT OF
INDUSTRIAL AND SYSTEMS ENGINEERING**

EPSTEIN INSTITUTE SEMINAR ISE 651 SEMINAR

***Additive Manufacturing: Past, Present
and Future***

David L. Bourell

**Ph.D., P.E., FASM, FTMS
Temple Foundation Professor
The University of Texas at Austin**

ABSTRACT

The collection of manufacturing technologies now known as additive manufacturing (AM) exploded on the scene in the last half of the 1980s. From a near-term perspective, this phenomenon was driven by the synergism of the advent and maturation of laser technology and desktop computing. From a long-term perspective, the field is built on layerwise manufacturing technologies that date back over 150 years. These historical technologies fall into two groups: topography and photosculpture. This presentation begins with an overview of the history of AM including precedents in topography and photosculpture. An analysis of the present landscape of AM on an international level will be given, including recent activities such as the 2009 AM Roadmap and the 2012 AM Pilot Institute of the National Network for Manufacturing Innovation. Some prospects for the future of AM will also be explored.

**TUESDAY, OCTOBER 30, 2012
ANDRUS GERONTOLOGY BLDG (GER) ROOM 309
3:30 – 5:00 PM**

SPEAKER BIO



Dr. David L. Bourell is the Temple Foundation Professor of Mechanical Engineering at The University of Texas at Austin. He is currently Director of the Laboratory for Freeform Fabrication. Dr. Bourell's areas of research include particulate processing with emphasis on sintering kinetics and densification, and materials issues associated with Laser Sintering (LS). He holds 9 primary patents dealing with materials innovations in LS dating back to 1990 and has published over 200 papers in journals, conference proceedings and book chapters. Dr. Bourell is a Fellow of ASM International and TMS, and he is also a lifetime member of TMS. In 2009, he received the TMS Materials Processing and Manufacturing Division Distinguished Scientist/Engineer Award. He has received two major conference career awards in additive manufacturing: the SFF Symposium FAME Award and the Portuguese VRAP Career Educator Award. Professor Bourell is a leading expert in advanced materials for Laser Sintering, having worked in this area since 1988. Dave was the lead author on the original materials patent for LS technology. Issued in 1990, this patent has been cited by 150 other patents, and it represents the original intellectual property for mixed and coated powders for LS, including binders.