



AIAA

American Institute of
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Dayton-Cincinnati Section

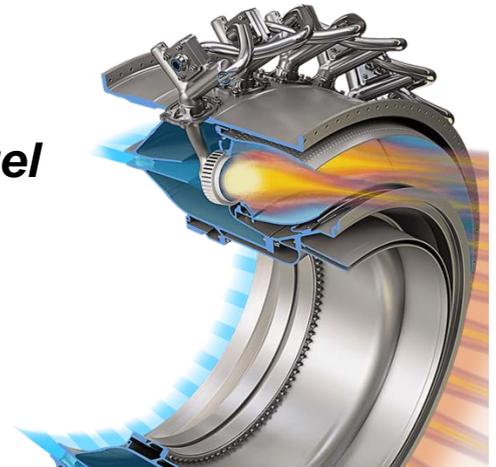
Lunch 'n' Learn

***Current And Future Challenges For
Commercial Gas Turbine Combustors, Fuel
Injection And Gaseous Emissions***

Guest Speaker:

Dr. Michael Benjamin

Friday, 17 Oct 2014



Dr. Michael Benjamin will address current and future challenges within the combustor section of modern commercial engines. As airlines demand improved fuel efficiency and no increase in life cycle costs relative to today's products, the engineering challenges for future combustors is particularly demanding as engine pressure ratios are pushed significantly higher. The associated increase in combustor inlet temperature presents combustion, cooling, thermal stress and materials engineering challenges that demand creativity, careful engineering decisions and significant design optimization. With the development of lean burn combustors in recent years, fuel injection requirements for piloting and premixing have driven innovative fuel injector designs and their method of manufacture. The design and development challenges of these fuel nozzles (and the basis of his recent awarding of the AIAA Design Engineering Award) will be discussed. Since 2007, Dr. Benjamin has been Senior Engineer/Sr. Staff Engineer, Combustion Aerodynamics at GE Aviation in Cincinnati. He previously worked at Parker Aerospace and joined GE Aviation to support the design of in-house advanced fuel injection systems. At GE, he initially worked on the enhanced durability fuel injector design for the GENx-2B and GENx-1B TAPS combustor for the Boeing 747-8 and 787 aircraft. He is the architect of the next generation LEAP TAPS II lean combustor and fuel injectors for the future Boeing 737 MAX, Airbus A320neo, and COMAC C919 narrowbody aircraft. His experience gained enhancing the GENx fuel injector design was incorporated and advanced for the LEAP combustor to produce very low gaseous and particulate emissions, increased life, and meet weight and cost requirements. GE's fuel nozzle team developed the novel Direct Metal Laser Melting (DMLM) design and manufacturing techniques that successfully meet these tough goals.

Time

11:45 AM

Location

China Garden Buffet

112 Woodman Dr.

Dayton, OH 45431

Lunch

**You will be able to
purchase the buffet**

