



*American Institute of  
Aeronautics and Astronautics  
Dayton-Cincinnati Section*

## **Dinner Meeting 19 April 2017**

All Welcome!

### **Time**

6:00 PM Social  
6:30 PM Dinner  
7:30 PM Presentation

### **Location**

Holiday Inn  
2800 Presidential Drive  
Fairborn, OH 45324

### **Reservations**

RSVP by Apr 14<sup>th</sup> to  
Marc Polanka  
[Marc.Polanka@afit.edu](mailto:Marc.Polanka@afit.edu)

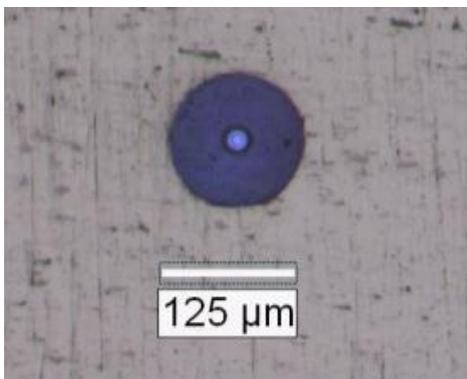
### **Dinner Menu**

**American Buffet:**

**Choice of Grilled Breast of Chicken  
or Sliced Roast Pork Loin**  
with  
**Potato Salad, Cole Slaw,  
Vegetables and Garden Salad**  
with  
**An open bar**

\$25.00 Professionals

\$10.00 Students



## **Guest Speaker: Marcelo Dapino Smart aerospace structures through ultrasonic additive manufacturing**

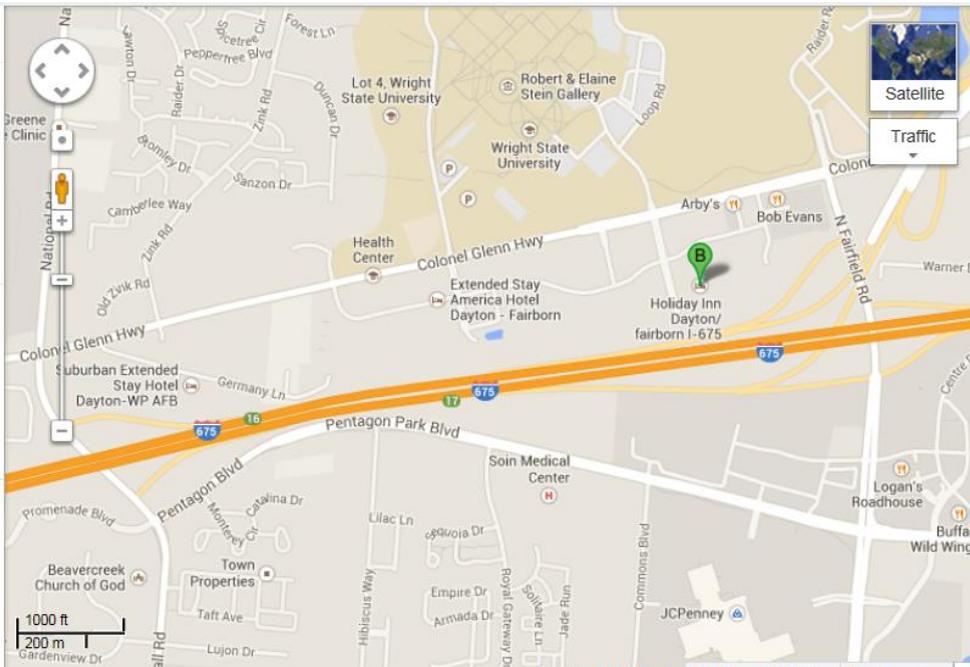


### **Abstract**

The development of methods to embed sensors into metallic structures is critical to the implementation of effective structural health monitoring strategies. Fiber Bragg Grating (FBG) sensors are attractive due to their high sensitivity, lightweight operation, and resistance to electromagnetic interference. Research conducted by the presenter utilizes ultrasonic additive manufacturing (UAM), a 3D printing process closely related to ultrasonic metal welding, to additively fabricate materials and structures from metallic foils. Unlike other additive processes, UAM process temperatures are well below the fusion temperature of the participating metals. In this presentation, research challenges, approaches, and opportunities associated with the development of the proposed smart aerospace structures and ultrasonic additive manufacturing are discussed. Unexpected findings will be presented in terms of the ability of UAM to embed FBGs.

### **Biography**

Marcelo Dapino is the Honda R&D Americas Designated Chair in Engineering at the Ohio State University, where he is a Professor in the Department of Mechanical and Aerospace Engineering. He serves as Acting Director of the Smart Vehicle Concepts Center (a National Science Foundation Industry/University Cooperative Research Center) and as a Senior Fellow of the Ohio State University Center for Automotive Research. As author or co-author of well over 200 technical articles, Prof. Dapino advises a thriving group of researchers who investigate smart materials, advanced manufacturing, and vehicle design.



***Directions:***

***From South: Exit I75 N onto I675 N***

***From N, E, and W: Take I70 to I675 S***

***Then take Exit 17 – North Fairfield Road. Head North to Col Glenn Hwy. Make a left at light on to Col Glenn.***

***Can make a left at any inlet but 3<sup>rd</sup> inlet has a traffic light and leads straight into Holiday Inn parking lot.***

***Enter through main hotel lobby.***

***Kitty Hawk room is around to the right once pass through lobby area.***

