

# Purdue University

## School of Materials Engineering

**Date: Friday,  
October 11, 2013**

**Time: 3:30 Refreshments  
3:45 Seminar and  
presentation of  
OMSE Award**

**Place: ARMS 1010**



**Infinite  
Possibilities**

### **John E. Barnes**

Leader, CSIRO Titanium Technologies  
Adjunct Professor, Royal Melbourne Institute of  
Technology, Australia



#### **ABSTRACT and SHORT BIO**

**From Atlanta to Australia and the points in between: How a Purdue graduate has made a career and some products out of Titanium.**

John Barnes is the Leader of CSIRO's Titanium Technologies which is the largest group in the world doing research and development in Titanium production and processing. CSIRO is Australia's national science agency and Australia is home to the most valuable reserves of titanium bearing ore, yet produces no metal. It is said that increasing the value of export from mineral sands to metal or finished product via additive manufacturing could see the natural resource reserve go from 90 years to 9,000 years. Despite his American affection for enunciating 'r's he was hired by CSIRO to run a \$15M portfolio affecting 70 people in Australia. John holds a B.S. in Materials Science Engineering and an M.S. in Metallurgical Engineering from Purdue University. Upon graduation John headed west to sunny Phoenix, Arizona where he worked at AlliedSignal/Honeywell with aircraft gas turbine engines working both advanced technology and commercial programs and ended up as Program Manager of Marine Engines just before leaving. It was here he got his first start in both titanium processing and additive manufacturing. You can imagine the types of people who have the money to buy a 5,000 horsepower helicopter engine and put it in a boat. John then spent the next 9 years at Lockheed Martin Skunk Works where he was the Senior Manager of Manufacturing Exploration and Development. The motto of this group was "figuring out how to make stuff that hasn't been made before" with the unofficial add on, "with technology that we're not sure why it works yet" and occasionally supplemented by "and no we can't tell you what it's for". John then moved his entire family some 10,000 miles further west to "sunny" Melbourne. As John is fond of saying, "if you take my whole career and cram it into a day or two, it's not too shabby" (with respects to George Constanza). Themes of this presentation might be, "why a sense of humor is essential", "experience is what you get when you were looking for something else", and touching John's favourite topic of Titanium and Additive Manufacturing and how CSIRO is striving to be globally relevant promoting how Ti can be used in additive manufacturing high performance components.