

# 3<sup>rd</sup> International Conference and Exhibition on **Materials Science & Engineering**

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## **Revolutionizing metallic biomaterials for biodegradable implants-A global status**

The purpose of this Engineering Research Center (ERC) is to transform current medical and surgical treatments by creating "smart" implants for craniofacial, dental, orthopedic, cardiovascular, thoracic and neural interventions. The ERC is developing biodegradable metals with the premise that new kinds of implants can adapt to the human body and eventually dissolve when no longer needed, eliminating multiple surgeries and reduce health care costs.

Biodegradable systems offer significant therapeutic advantages over implants used today. These innovations would particularly benefit pediatric patients suffering from cleft palate, angular deformities of long bones, limb length discrepancies, or trauma including fractures that require pins and screws for repair. Biodegradable metal implants would reduce the expense and spare children the pain of multiple procedures used to implant, then later remove, refit and re-implant the current generation of devices. Biodegradable stents could reduce or eliminate the need for additional invasive procedures. Sensors and other neural applications developed by the ERC will provide new information on the biological response of the body to implanted devices. Breakthrough activities include new alloying techniques to produce tunable degradable metallic implants, new improved versions of existing clinical-use plates and screws, innovative nanocoating technologies to yield special surface functionalities and methods to develop new sensors for monitoring/controlling implant corrosion and studying bone growth. The talk will specifically highlight the innovations, translation and trailblazing pathways through holistic University- Industry partnerships for economic ecosystem and commercialization

## **Biography**

Jag Sankar is the author of 400 peer-reviewed articles, book chapters, and scientific papers. He as PI, has generated more than \$45 million of competitive research funding, organized and sponsored more than 25 international conferences/symposia and has given more than 20 Plenary/Keynote addresses. Some of his recognitions include, 2010- Max Gardner Award, one of the first Distinguished University Professors at NCAT, The White House Millennium Researcher title, 2004 AAAS Mentor Award- publisher of "Science", Hind-Rattan Award, Fellow of NIA and AIMBE, recognitions from ASME, ORNL/DoE, NCAT etc.

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