

# Meeting the Demands of Bone Healing



## Susmita Bose

Herman and Brita Lindholm Endowed Chair Professor, Mechanical and Materials Engineering Affiliate Professor, Chemistry

## CURRENT RESEARCH

### Cross disciplinary research advances sophisticated bone engineering technologies

Broken bones are not considered a threatening medical emergency. However, as we age, and bones become more brittle, broken bones can be a challenge for patients and providers alike. Similarly, in areas where there is little medical attention or a natural disaster has caused a high rate of injury, broken bones are a common and challenging threat. Dr. Susmita Bose, Herman and Brita Lindholm Endowed Chair Professor of the School of Mechanical and Materials Engineering as well as Affiliate Professor of Chemistry at Washington State University, studies bone tissue engineering and drug delivery in order to improve health and save lives. Her research helps to address age-related global problems in society by crafting sophisticated technologies for aging populations that allow individuals to lead active lifestyles and treat sport related injuries or musculoskeletal problems. Thus, by combining engineering and materials science, Dr. Bose is aiding in the development of bone modification, infection, and treatment. Such research will have an impact on a large portion of the population including, patients with osteoporosis, patients in need of hip or knee replacements, war veterans with clinical needs, and even those with neurological problems.

With the belief that any health related research can "only be successful with cross-disciplinary understanding and collaboration," Dr. Bose has devoted her professional career to diverse collaboration across many fields. Such collaboration has resulted in more than 200 peer reviewed articles, three issued US patents, five edited books and over 5,800 citations as well as science that is likely to make an impact on patients in the future. Furthermore, her extensive research works...

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## AFFILIATION

 Washington State University

## EDUCATION

- Ph.D., in Physical Organic Chemistry, 1998 , Rutgers University
- M.S., in Organic Chemistry, 1992 , Indian Institute of Technology, India
- B.S., in Chemistry (Honors), 1990 , University of Kalyani, India

## AWARDS

- 2004 The Presidential Early Career Award for Scientists and Engineers (PECASE, given at the White House by the US President) in 2004, from the National Science Foundation (NSF) / the CAREER Award was awarded in 2002.
- 2013 College of Fellows, American Institute for Medical and Biological Engineering (AIMBE)
- 2013 Class of Fellows, American Ceramic Society
- 2014 American Ceramic Society, Richard M. Fulrath Award
- 2015 Life Science Innovation Northwest (LSINW) Women to Watch in Life Science Award 2015 by Washington Biotechnology and Biomedical Association

## RESEARCH AREAS

Natural Disasters / Emergency, Veteran's Causes, Life Science, Materials Science / Physics

## FUNDING REQUEST

Your contributions will support the continued research of Dr. Susmita Bose, of Washington State University, as she addresses age related global problems in society with bone tissue engineering and drug delivery. Donations will fund the necessary materials for the sophisticated biomedical research of Dr. Bose and her team. In choosing to donate, you will play a role in supporting interdisciplinary research, especially in the area of bone scaffolds and drug delivery applications.