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Two decades of commercializing nanomedicine: From medical devices to drug carriers to implantable sensors

Nanotechnology is revolutionizing the field of medicine. While several decades ago, there were not many nanotechnology-derived medical devices approval by regulatory agencies (such as the FDA), today there are over a dozen today. This keynote talk will cover reasons why one should consider using nanotechnology for medical devices to improve tissue growth, decrease infection and reduce inflammation- all criteria necessary for the next generation of improved medical devices. It will cover several examples of FDA approved materials. It will also look towards the future and describe how nanotechnology is being used in the generation of implantable nanosensors that can assess tissue responses to implants, send such information to a cell phone, and have an implant that responds on-demand to detrimental biological events.

Speaker Biography

Thomas J Webster's degrees are in chemical engineering from the University of Pittsburgh (B.S., 1995) and in biomedical engineering from Rensselaer Polytechnic Institute (M.S., 1997; Ph.D., 2000). Webster has graduated/supervised over 189 students and has published over 583 peer-reviewed literature articles forming 11 companies with 5 FDA approved implants. Webster currently directs or co-directs 5 centers in the area of biomaterials and is a fellow of 6 academic societies. He has appeared on numerous news channels and the recent special "Year Million" TV series on National Geographic talking about the future of medicine and science.

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