

Texas A&M University Nano/Micro Seminar Series Presents:

Three Dimensions of Individualized Nanomedicine

by Mauro Ferrari

Friday, September 11, 1 p.m. – 2 p.m.
Room 103, Zachry Engineering Center (ZEC)

Abstract: In judicious integration with the biological and clinical disciplines, nanomedicine offers unprecedented opportunities for the individualization of prevention, screening, diagnostics and therapy. The fundamental queries in individualized medical therapy pertain to the delivery of the “right” bioactive agents at the “right” place, with the “right” time profile, triggering the “right” interactions with the target biology, and in a manner that allows for the monitoring for the therapeutic efficacy and undesired effects, as rapidly as possible. In this talk I will review these challenges and the efforts to address them in our laboratory, using a combination of silicon nanotechnology, molecular biology, mathematics and multiple engineering disciplines. The four technology platforms I will present are: MultiStage Vectors (MSV) for intravascular injection; Nanostructured surfaces (nanochips) for proteomic and peptidomic profiling from biological fluids; the space-bound nanochannel Delivery Systems (nDS) for controlled release from implants; and our ‘baby’, the BioNanoScaffolds (BNS) for Post-Traumatic OsteoRegeneration.

Biography: Dr. Mauro Ferrari serves as a professor & director of the Center for NanoMedicine, Brown Foundation Institute of Molecular Medicine, chairman in the Department of Biomedical Engineering, University of Texas Health Science Center at Houston, Professor of Experimental Therapeutics, University of Texas M.D. Anderson Cancer Center, Professor of Bioengineering, Rice University and President of the Alliance for NanoHealth, Houston TX. Ferrari received a Ph.D. in mechanical engineering from U.C. Berkeley. Ferrari is a founder of biomedical nano/micro-technology in biomedical applications with more than 160 peer-reviewed journal articles, six books, more than 20 issued patents and about thirty more pending in the United States and internationally. His contributions have been recognized by a variety of accolades, including: the Presidential Young Investigator Award of the National Science Foundation; the Shannon Director’s Award of the National Institutes of Health; the Wallace H. Coulter Award for Biomedical Innovation and Entrepreneurship; and the Italiani nel Mondo Award from the Italian Ministry of Foreign Affairs. His career research and development portfolio totals over \$50 million. Ferrari also served as the Special Expert on Nanotechnology at the National Cancer Institute in 2003-2005, providing leadership into the establishment of the NCI’s Alliance for Nanotechnology.

If you have a question regarding this seminar, please contact Arum Han, arum.han@ece.tamu.edu.

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