CHEMICAL, BIOLOGICAL & MATERIALS ENGINEERING

100 E. Boyd, Sarkeys Energy Center, T-335
405-325-5811
The University of Oklahoma
Norman, Oklahoma
2011 – 2012 Seminar Series

CONTECENTE CONTECUTOR CONTECUTOR

DR. MAURO FERRARI

PRESIDENT AND CEO
ERNEST COCKREL JR. DISTINGUISHED ENDOWED CHAIR
THE METHODIST HOSPITAL RESEARCH INSTITUTE
AND PRESIDENT, ALLIANCE FOR NANOHEALTH
HOUSTON, TEXAS

Will present a seminar on

"NANOMEDICINE TRANSITIONS TO TRANSPORT ONCOPHYSICS"

The advent of novel engineering technologies affords unprecedented advances toward long-elusive objectives of medical research. Individualized medicine responds to the basic but generally unattainable question of identifying the right therapy, reaching the right therapeutic target in the body at the right time, and securing immediate feedback as for its efficacy and undesired collateral effect. Finally, individualized medicine appears to be a credible general objective in many pathologies, owing to the integration of classical disciplines of clinical medicine, methods of molecular biology, and novel technology platforms.

Nanotechnologies are of great interest in the context of the drive toward individualized medicine, and may prove to be the necessary catalyst for its large-scale implementation. In this talk I will present nanoporous-silicon-based approaches for the individualization of medical intervention: multistage vectors for the preferential localization of therapeutic agents; therapeutic monitoring nanotextured chips for the proteomic and peptidomic content profiling of biological samples; nanochannel delivery systems for intelligent time-release from implants, and bionanoscaffolds for post-traumatic osteoregeneration.

While novel nanoplatforms engender direct clinical applications, at the same time they afford the formulation of novel frameworks and hypotheses for the basic understanding of pathological processes. In particular, multistage particulates are the probes that afford the exploration of a new perspective of cancer, that is, that the unifying aspect of the canonical 'hallmarks of cancers' all relate to dys-regulation of mass transport at scales including the molecular, cellular, microenvironmental, and systemic. These considerations are the starting point for "Transport OncoPhysics".

THURSDAY, JANUARY 26, 2012 COOKIES AND COFFEE -- 2:45 P.M. SEMINAR -- 3:00 P.M. SARKEYS ENERGY CENTER, ROOM M-204

THIS IS A REQUIRED SEMINAR FOR CHE 5971

Accommodations on the basis of disability are available by contacting the office before the event.