BIOENGINEERING INSIGHTS 2009

Translating engineering and science into biomedical and biotechnological applications.

Held in Beautiful Santa Barbara at
Fess Parker's DoubleTree Resort

KEYNOTE SPEAKERS: LEROY HOOD, DIRECTOR AND CO-FOUNDER OF THE INSTITUTE OF SYSTEMS BIOLOGY
JAMEY MARTH, DIRECTOR, UC SANTA BARBARA-BURNHAM CENTER FOR NANOMEDICINE

DRUG DELIVERY

Drug Delivery research at UCSB has deep foundations in material science, and in the establishment of cross-disciplinary research teams spanning a range of disciplines including chemistry, biology, physics and engineering. Drug delivery technologies under development at UCSB range from self-assembling nano-carriers to needle-less ultrasound-enhanced transdermal delivery. Additional relevant technologies include high-throughput screening of excipient combinations to new approaches for antibody development.

DIAGNOSTICS & DETECTION

Research at the interface between engineering and the molecular sciences at UCSB is creating new paradigms for point-of-care diagnostics. In this session, rapid, precise, and cost effective diagnostics tools are showcased that are based on research in molecular signal transduction and microfluidics.

SYSTEMS BIOLOGY

Systems biology is the understanding of biological network behavior through the application of modeling and simulation, tightly linked with experimentation. The systems biology efforts at UCSB address questions in basic science as well as problems of medical and societal impact, including cancer, diabetes, Alzheimer's, ischemia, post-traumatic stress disorder, hemorrhage and environmental stress.

BIOMATERIALS

Biological materials and assembly pathways offer advantages over traditional processing methods for materials in medical prostheses implants, and devices as well as in regenerative medicine. This is possible through the translation of the underlying molecular mechanisms into biologically-inspired engineering solutions. Areas presented in this session are: bio-compatible materials, optical transmission materials, and energy storage.

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