

## ▶ **BioMEMS and Biodefense**

*Cancer and pathogen detection take center stage in the nation's capital.*

### **BioMEMS**

The fifth annual BioMEMS and Nanotech World 2004 meeting will take place August 16–17 at the Ritz-Carlton in Washington, DC. The conference is designed to promote synergy in the areas of detecting rare transcripts and conducting single-cell analysis to lead to accurate and sensitive cancer detection, diagnosis, and prevention. This year's conference will focus on the following topic areas: drug delivery systems, nanoparticles for molecular imaging, rare transcript and single-cell analysis—applications in systems biology, and minimally invasive medical technology.

The keynote session will be held Monday morning, August 16.

Speaker topics include Opportunities for Nanotechnology for Cancer and Beyond, Role of Nanotechnology in Early Cancer Detection and Treatment, Micro- and Nanoscale Platforms for Targeted Therapeutics, and Systems Design and Nanodevices. Following the session, attendees can view the exhibit and poster areas.

The Drug Delivery session will cover Polymer Microchip for Biodegradable Drug Delivery, Advances in Drug Delivery, Magneto/Optical Nanoparticles, and Use of a Nanopore Membrane in a Novel Drug Delivery Device.

The Nanoparticles for Molecular Imaging ses-

sion will cover the following topics: Clinical Opportunities and Challenges for Imaging with Nanoparticles, Multifunctional Nanosystems for Molecular Imaging and Targeted Therapeutics In Vivo, Water Soluble Quantum Dots for Fluorescence Imaging In Vivo, and Nanoparticles for Molecular Imaging.

The Rare Transcript and Single Cell Analysis: Applications in Systems Biology session will be held on Tuesday morning, August 17, following a poster and exhibit viewing. This session will cover the following topics: Nanosystems Biology, Higher Resolution Genomic Analysis with Microarrays, Single Molecule Amplification in a Continuous Flow LabChip Device, Single Molecule Detection and Manipulation, Microdevices for Biomolecular Detection, and Micro- and Nanotechnologies for Single Molecule Detection.

The last session, Minimally Invasive Medical Technology, touches upon the following topics: High Resolution Micromachined Ultrasonic Transducers for Minimally Invasive Imaging, Intravascular Drug Delivery Microsystems, Catheter Microsensors, and Creating Integrated Surgical Tools using MEMS-based Sensors.

### **Biodefense**

The Research, Technologies, and Applications in Biodefense conference will be held following the BioMEMS conference on August 18–19. This year's conference will focus on the development of integrated handheld biosensors, single molecule detection of pathogens, and advances in vaccine therapy. The conference is divided into four sessions: a strategic overview, nanobiodefense, next-generation detection, and therapeutic developments in biodefense.

The opening session, Strategic Overview of Biodefense and Opportunities for Technology Development, will be held on Wednesday morning, August 18, and covers the following topics: Biological Countermeasures Science and Technology Programs within the U.S. Department of Homeland Security's Advanced Research Projects Agency, Design Approaches to a Portable Diagnostic System, Developing and Implementing New Technology Systems in Biodefense, Technology Triage—System Design for Global Virus Screening, and Detection Instruments for Astrobiology.

That afternoon, the Nanobiodefense session will take place. The topics for this session include Application of High-Sensitivity Detection Systems to Biodefense, Designer Nanoparticles for Multiplexed Bioassays, and Semiconductor-based Microarrays for Systems Biology.

On Thursday morning, August 19, the Next Generation Detection session will be held. Topics covered include Identifying Biomarkers from Host Response using a Human Whole Blood Model, Real-Time Detection of Microbial Contamination, A Novel Method for Massively

Parallel Whole Genome Sequencing, Electrochemiluminescence Methods in the Detection of Select Agents, and Computational Intelligence for Pathogen Identification.

That afternoon, the final session, Therapeutic Developments in Biodefense, will take place. Session topics are U.S. NIAID Biodefense Resources and Sponsored Proteomics Research: Bead Based Proteome Screens, Targeting Toll-Like Receptors to Induce Innate and Adaptive Immunity Against Biothreat Agents, Selecting and Evolving Antibodies for Potent Neutralization of Botulinum Neurotoxins, and Oligoclonics: Mixtures of Recombinant Human Antibodies Produced by Clonal Cell Lines for Improved Biological Efficacy.

For more information on any aspect of either meeting, visit the Cambridge Healthtech Institute's website at [www.healthtech.com](http://www.healthtech.com). ■

## ▶ **upcoming meetings**

**228th ACS National Meeting**  
Philadelphia, August 22–26  
[chemistry.org/meetings](http://chemistry.org/meetings)

**10th Annual Society for Biomolecular Screening (SBS) Conference and Exhibition**  
Orlando, FL, September 11–15  
[www.sbsonline.org](http://www.sbsonline.org)

**11th Annual International Microarray and Microtechnology Congress (Chips to Hits)**  
Boston, September 20–23  
[www.chipstohits.com](http://www.chipstohits.com)