



INTEGRATED DIAGNOSTIC SYSTEMS

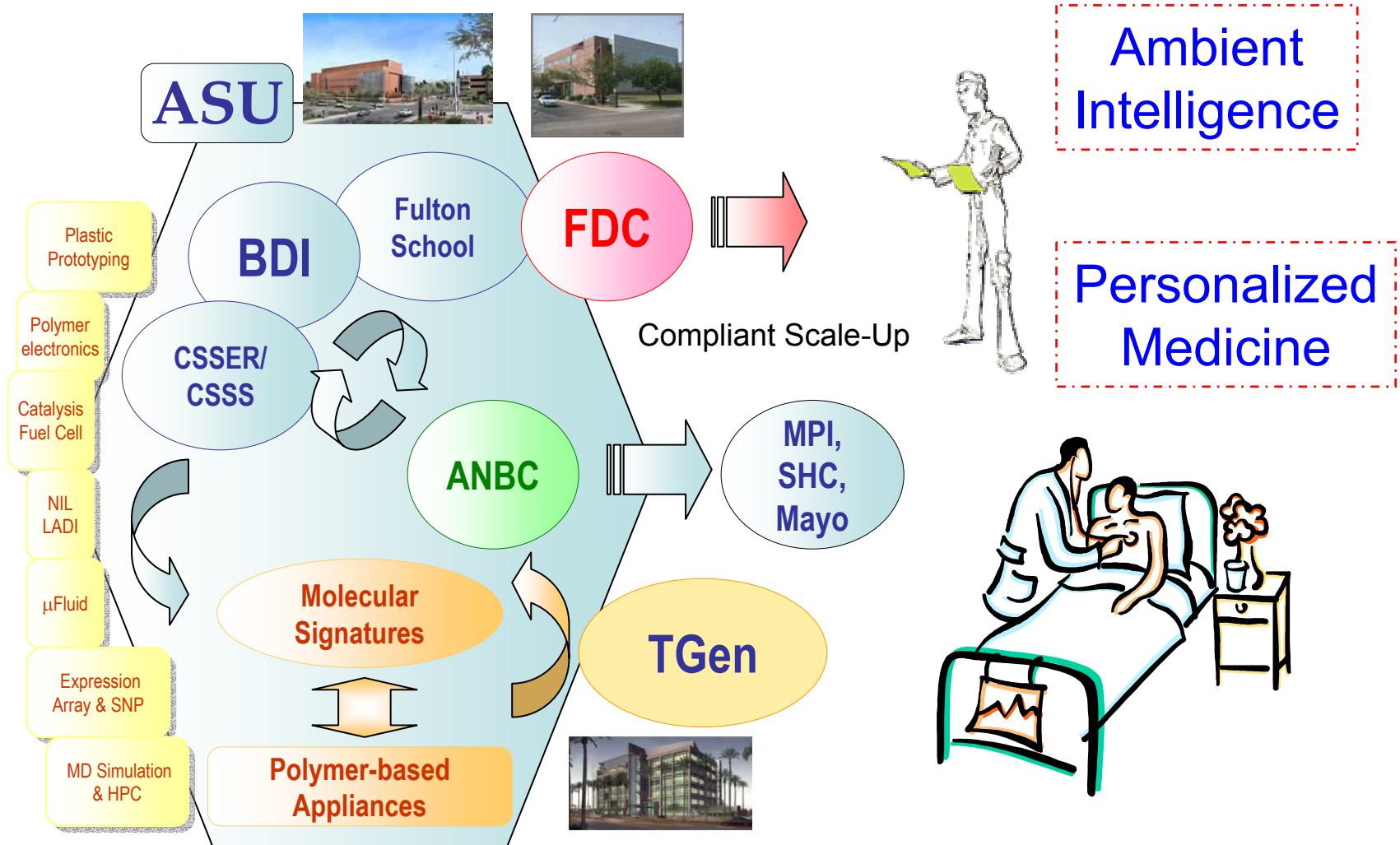
Center for Applied Nanobioscience (ANBC)

Presented by

Dr. Frederic Zenhausern, Director & Professor



Infrastructure & Resources

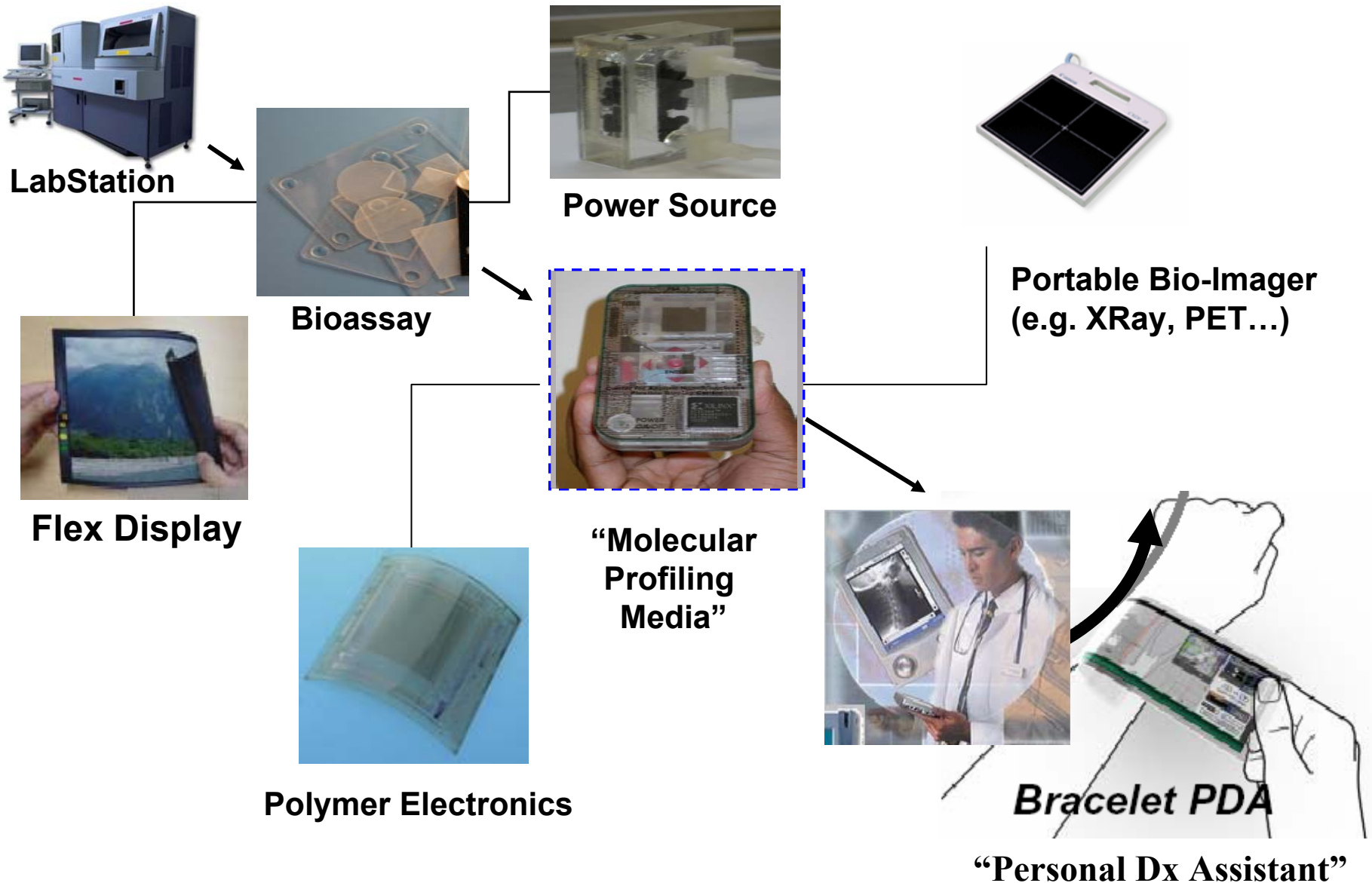


Why a plastics based platform ?

- Need for ultra low cost technology in diagnostics applications
- Need to integrate advanced functionalities into the same (plastic) substrate (advanced performance)
- Need to develop technologies for high-volume production (reliability)
- Accompanying scalable methods and techniques as alternatives to photolithography (flexibility)

A new generation of “smart” devices at the right cost in order to enable truly integrated medical micro/nano-systems

Next Generation Medical Devices



From Traditional Mask Fabrication to NanoFab

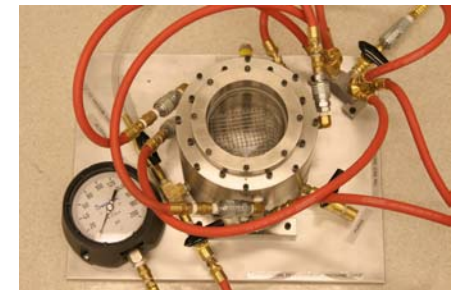
JEOL JBX-6000FS/E



FEI Nova



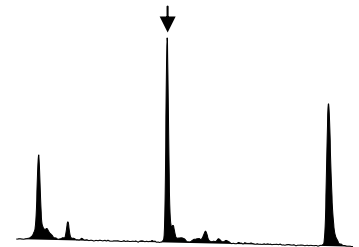
Class 1000 Nanofab



Nanoimprint

And Bioassay Development

4000 sf Wet labs for assay development
2000 sf laser labs & Analytical Testing
Plastic Rapid Prototyping, Electronics
32 nodes SuperComputer
Quality Systems (SAN/LAN)



Product Development Lab (PDL)

- Project Management
 - Project planning
 - Logistics rationalization
- Six Sigma for process characterization/optimization
 - Multivariate statistical analysis of processes
 - Process optimization
- Large Scale Prototyping
- Quality Systems
 - Document control (ECM)
 - Product development process (BPM)

Numerous Government Relationships/Contracts



Projects Portfolio Categories

- Bioterrorism (radiation), Disaster Preparedness & Pandemic Outbreak (TB, Avian Flu...)
- Forensic (point-of-contact), Human ID
- Infectious Diseases (FISHH, Women's Health)
- Cancer & Rare Diseases
- Process Monitoring, Reagent Packaging & others

BIOSURVEILLANCE NOW !

Rapid Detection: Bioterrorism, Disaster Preparedness & Emergency Response

Bird-Flu Crisis Spotlights Weak Monitoring System

The threat of avian flu reveals there isn't a global infrastructure--or even a single U.S. system-- to track an outbreak quickly

[InformationWeek](#) Oct. 17, 2005



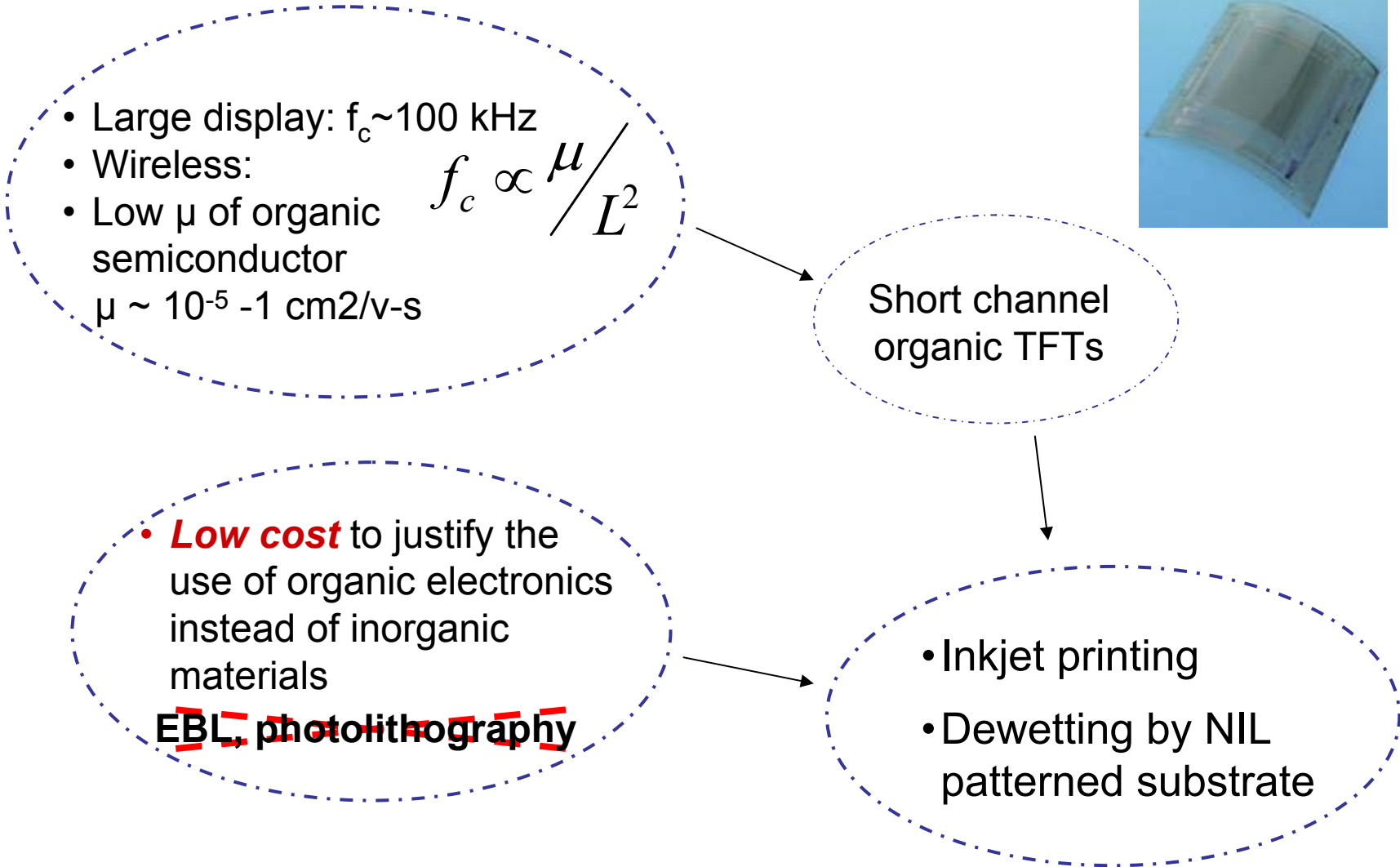
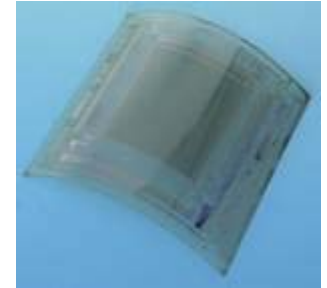
Leavitt Discusses Hurricane Katrina at Health IT Summit

September 09, 2005

HHS Secretary Mike Leavitt on Thursday told crowd gathered at the second annual [Health Information Summit](#) that Hurricane Katrina has underscored the need for interoperable electronic health records and a **robust biosurveillance system** to coordinate resources in future emergencies.



High Performance OTFTs at **Low Cost**



Conclusion

- Integration & miniaturization will enable Personalized Medicine by:
 - nano-to-micro for rare sample prep
 - “reagent less”
 - automation, ease-of-use
 - reliability and accuracy
 - low cost
 - smart, scalable, compliant