

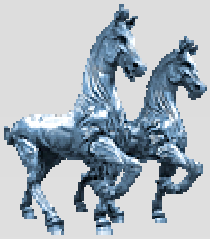
Defense Sciences Office

Office Overview

Lawrence H. Dubois
Director

<http://www.darpa.mil/DSO/>

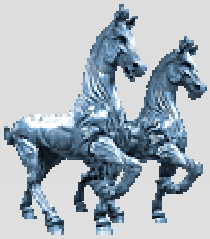
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DSO: *Mission*

“Technology Harvesting”

Identify and vigorously pursue the most promising technologies within the science and engineering research communities and develop them into new DoD capabilities.



DSO: *In Practice*

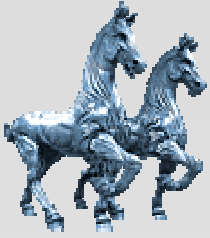
Respond to technological opportunity

- “*Miracle Identification*”
- *Catalyze* the creation of new technologies
- Clear understanding of military needs

Multidisciplinary technical approach

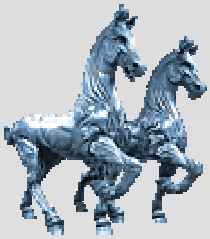
- Office is technically diverse
- Seek opportunities at interfaces between conventional disciplines
- *Teaming*

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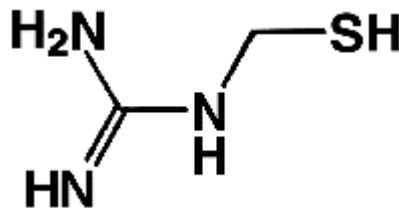
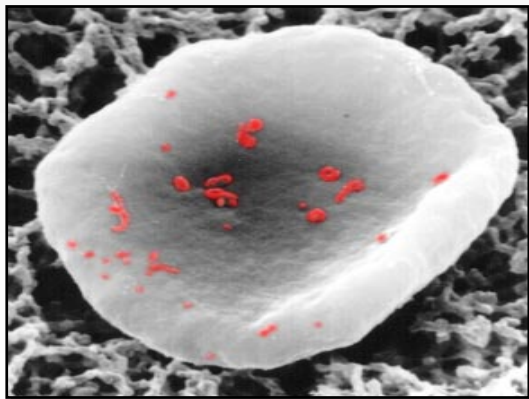
DSO: *Technology Thrusts*

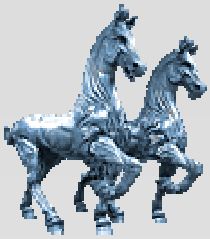
- Biological Warfare Defense
- Biology
- Defense Applications of Advanced Mathematics
- Materials and Devices for New Military Capabilities



Biological Warfare Defense

- Medical countermeasures
- Advanced diagnostics
- External protection
- Consequence management
- Genomic sequencing

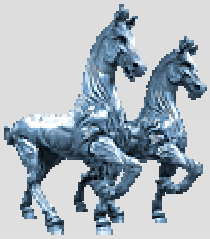




Biology

- Tissue-based biosensors
- Controlled biological systems
- Bio-inspired systems
- Biomaterials / bioprocessing

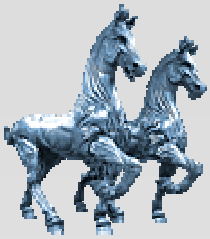




Advanced Mathematics

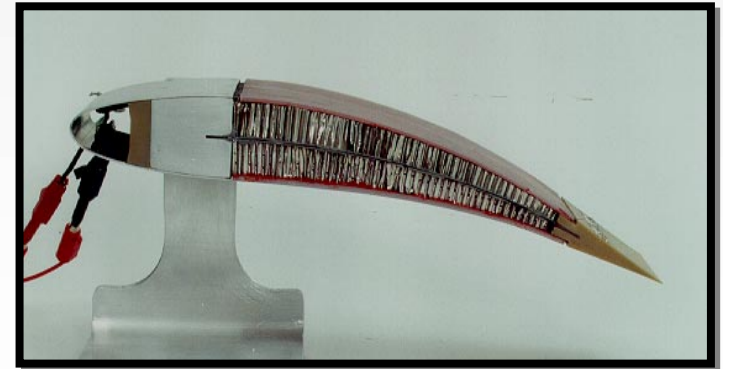
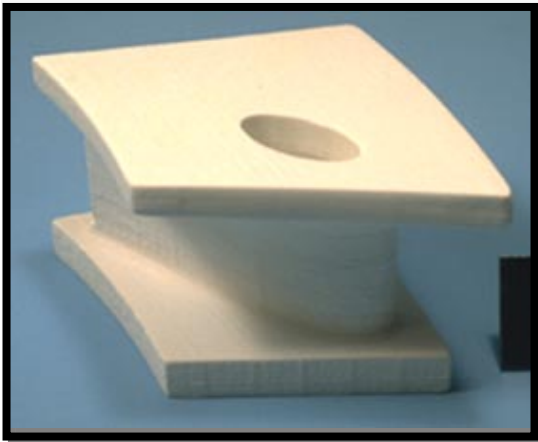
- Signal and image processing
- Electromagnetic computations
- Fast and scaleable computational algorithms
- Optimized micro-structural process control for thin film growth

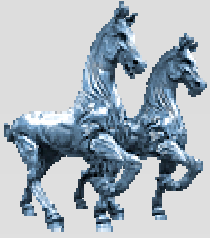
$$Z = Z' + V' T V \quad \text{DSO}$$



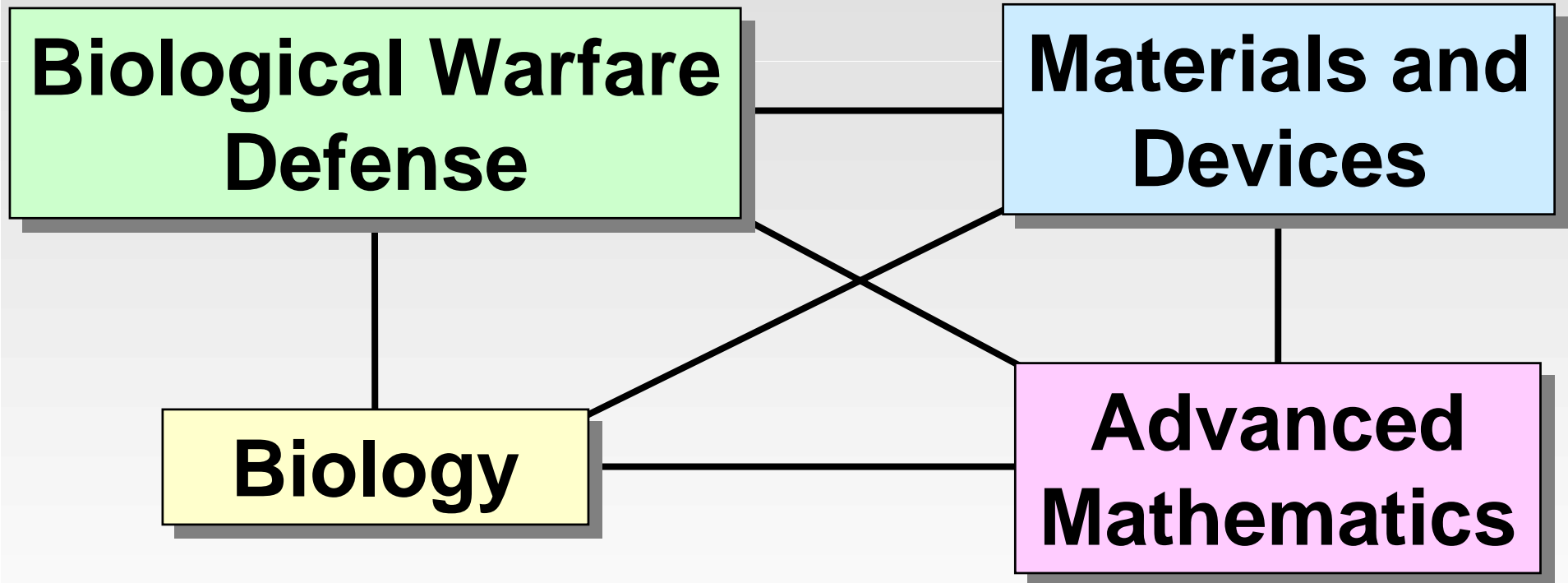
Materials and Devices

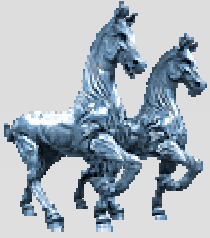
- *Functional* materials and devices
- *Smart* materials and demonstrations
- *Structural* materials and components
- Mesoscopic machines
- Power generation and storage





DSO Program Synergy





Developing New Ideas

Biological warfare defense

Biomolecular systems

Virtual electromagnetic test range

Meso - 2000

Compact hybrid power systems

Accelerated materials acceptance

New materials / processing concepts

Other really cool stuff!

<http://www.darpa.mil/DSO/solicitations/>

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