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SWEDISH DEFENCE RESEARCH AGENCY

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Swedish Defence Research Agency

Division of NBC Defence

SE-901 82 UMEÅ

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Filnamn

Division of NBC Defence

Director: Åke Sellström
Deputy Directors: Ingrid Fängmark
Kathrine Jonsson

Threat Assessment	Medical Counter-measures	Environment and Protection	NBC analysis	Defence medicine
Anders Norqvist Head of Dept	Anders Bucht Head of Dept	Åsa Fällman Head of Dept	Britt Karlsson Head of Dept	Thomas Kjellström Head of Dept
•NBC Threat Analysis •Human toxicology •Environmental toxicology •Organic chemistry •Biochemistry	•Molecular pathogenesis •DNA-vaccines •Inflammatory response •CNS effects •Cardiovascular effects	•CBRN Detection and Warning •Dispersion Modelling •Physical Protection •Environmental and Health Risks analyses	•Sampling •Analysis •Verification •Mass spectrometry •Microarray technology	•Physiology •Naval medicine •Aeromedicine •Traumatology

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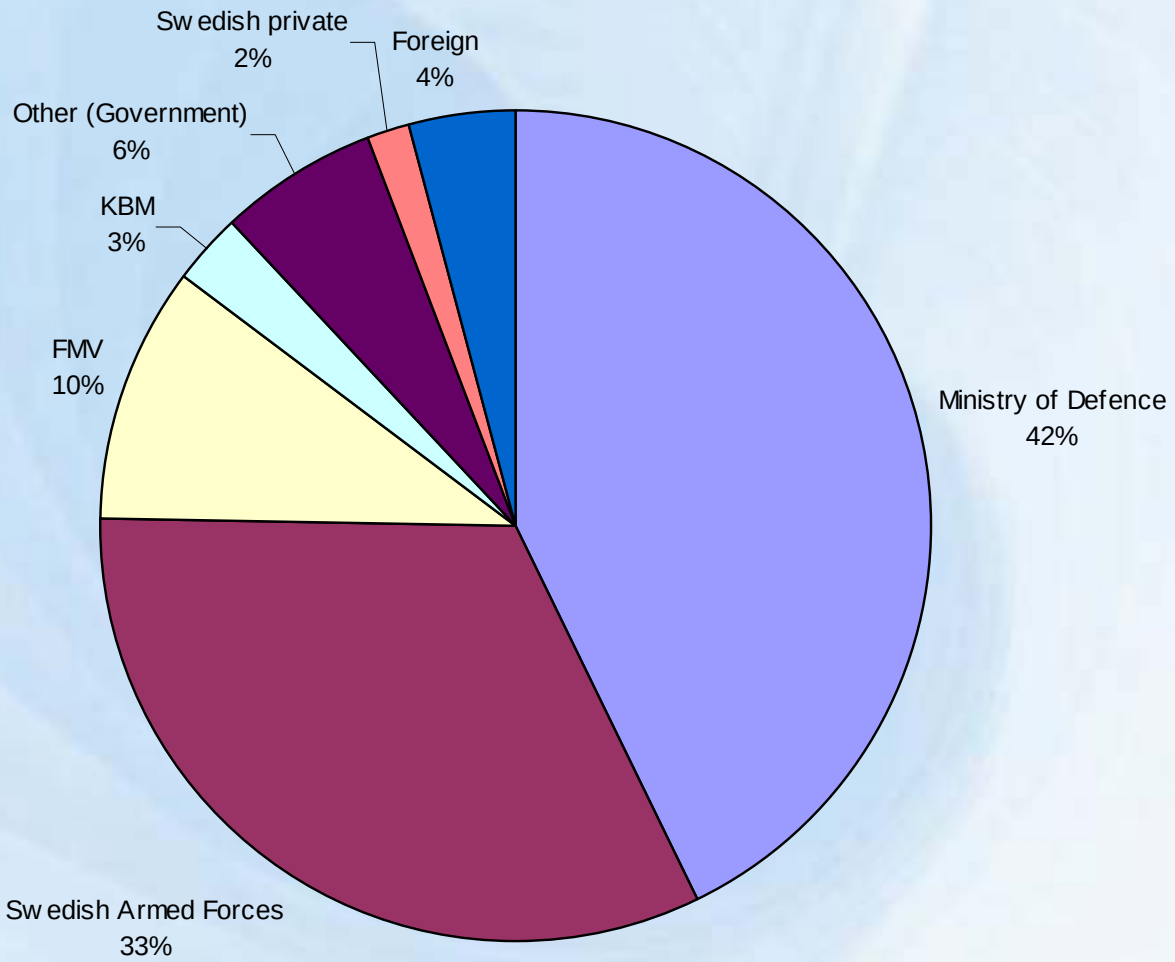
Research fundings 2004

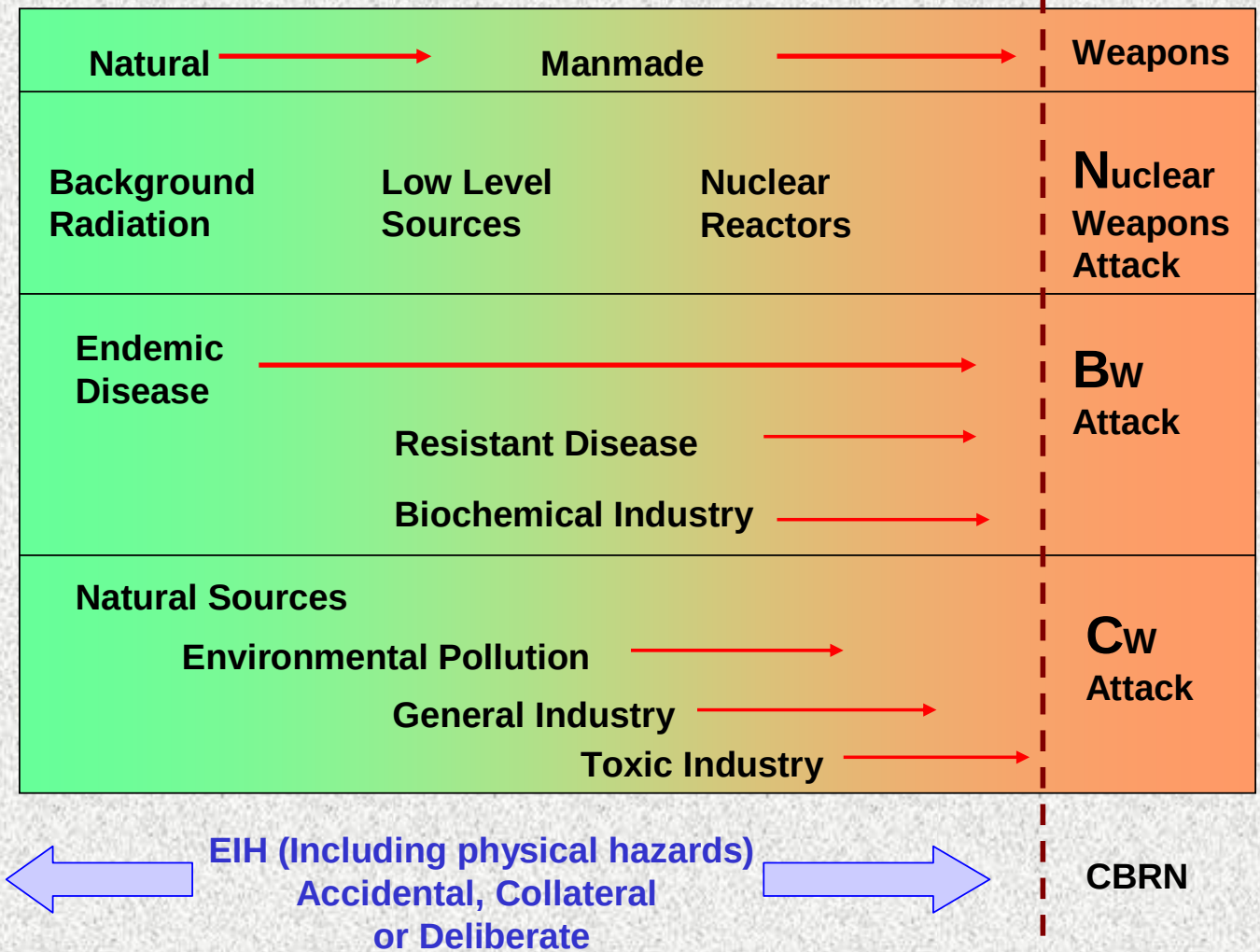
Division of NBC Defence



Business areas

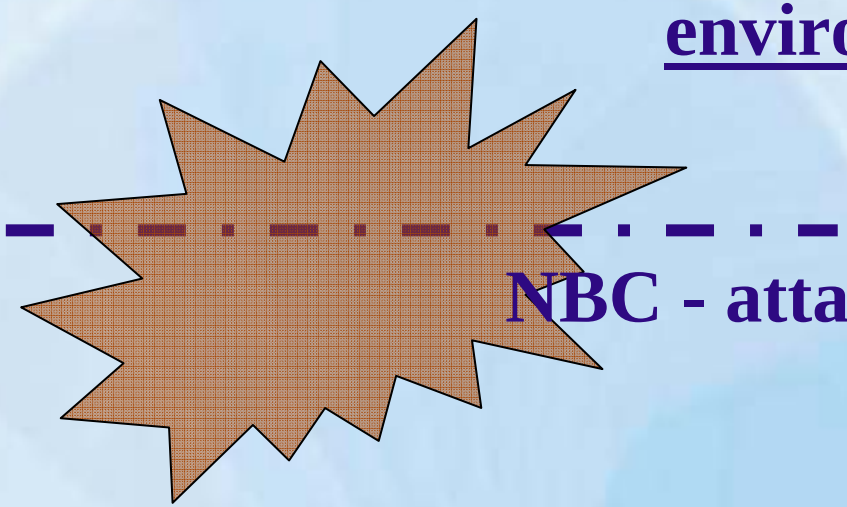
- Future threats and risks
- CBRNE forensic laboratory and surveillance
- Future protection
- Operational support

SPECTRUM OF EIH THREAT



The Modern NBC - Threat

Peace-keeping operations as working environment



”load”

Normal maximal exposure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Analyzing the major theories
Chemical exposure, biological agents, oil fires, depleted uranium, vaccines, pesticides, DP, combat stress
Six interviews
which offer a deeper understanding of this issue
The veterans
Their very human stories of anxiety, pain, bitterness and suspicion.
A closer look
Was Kamisiyah a cover-up?
How well did chemical detections work?
The call for 'independent scientists'
The media's role
What were the challenges in reporting this kind of story?
A guide for exploring the issue
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EXPRESSEN.SE

Flera fall av harpest i Kosovo

WHO report

Crimean-Congo blödarfeber i Kosovo

E-post
info@dn.se

DAGENS NYHETER.

Prenumerera
Annonsera

Utarmat uran påverkar inte hälsan

Svensk trupp nära uranrester

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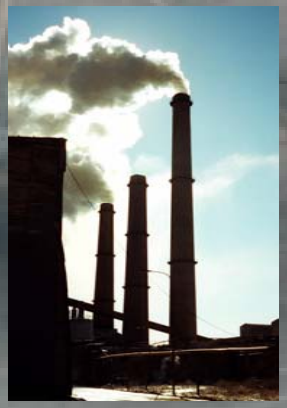
Force Health Protection vs Environmental Protection

Environment



Health

Soldier

Environmental and Industrial Health Hazard (EIHH)

SAF Mission support (unclassified 2001-2005)

Lead alarm:
Norway stops female deployment to Mitrovica

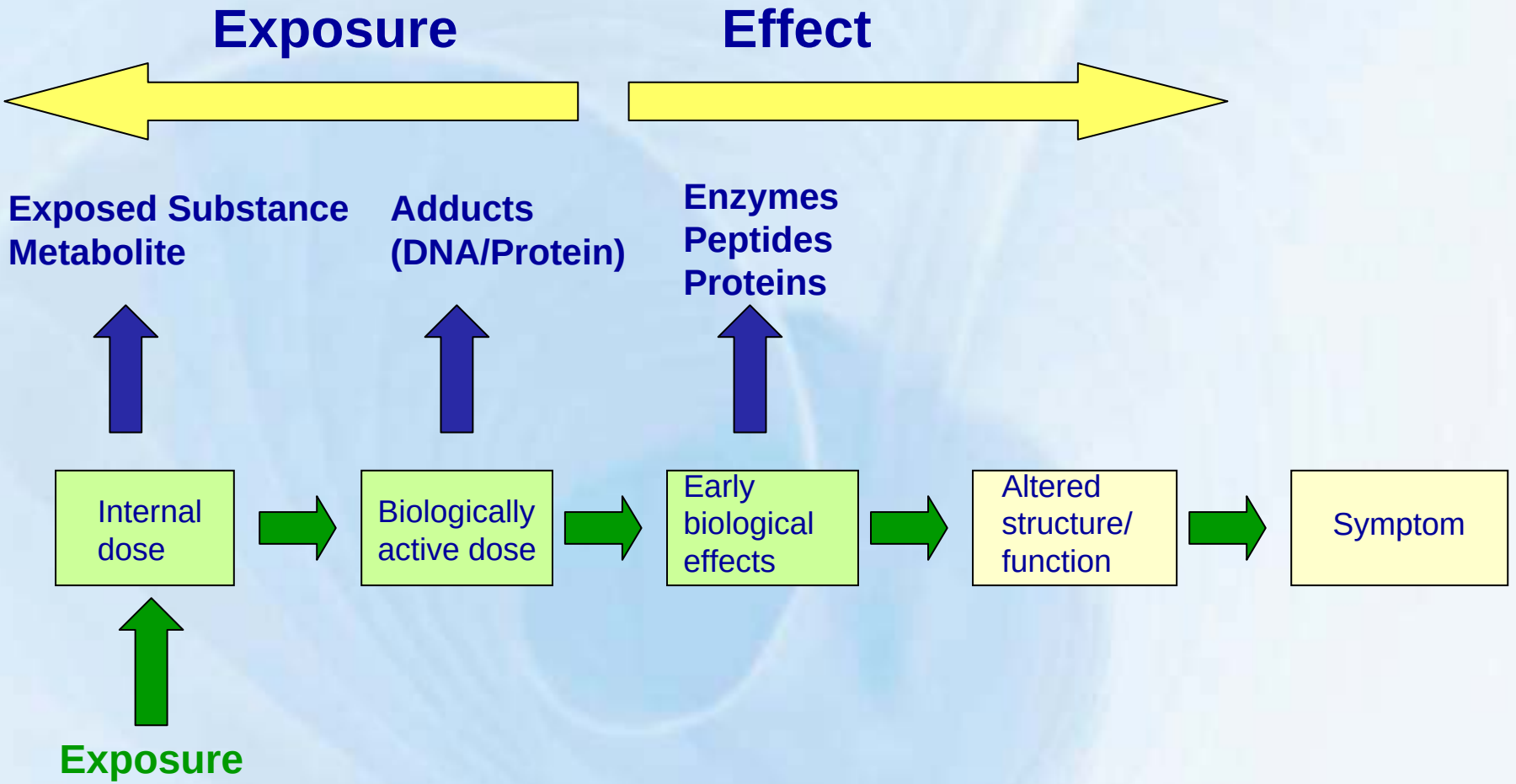
Canadian troops sue: fear bauxite- Exposure

”Fecal dust alarm (Canada)”

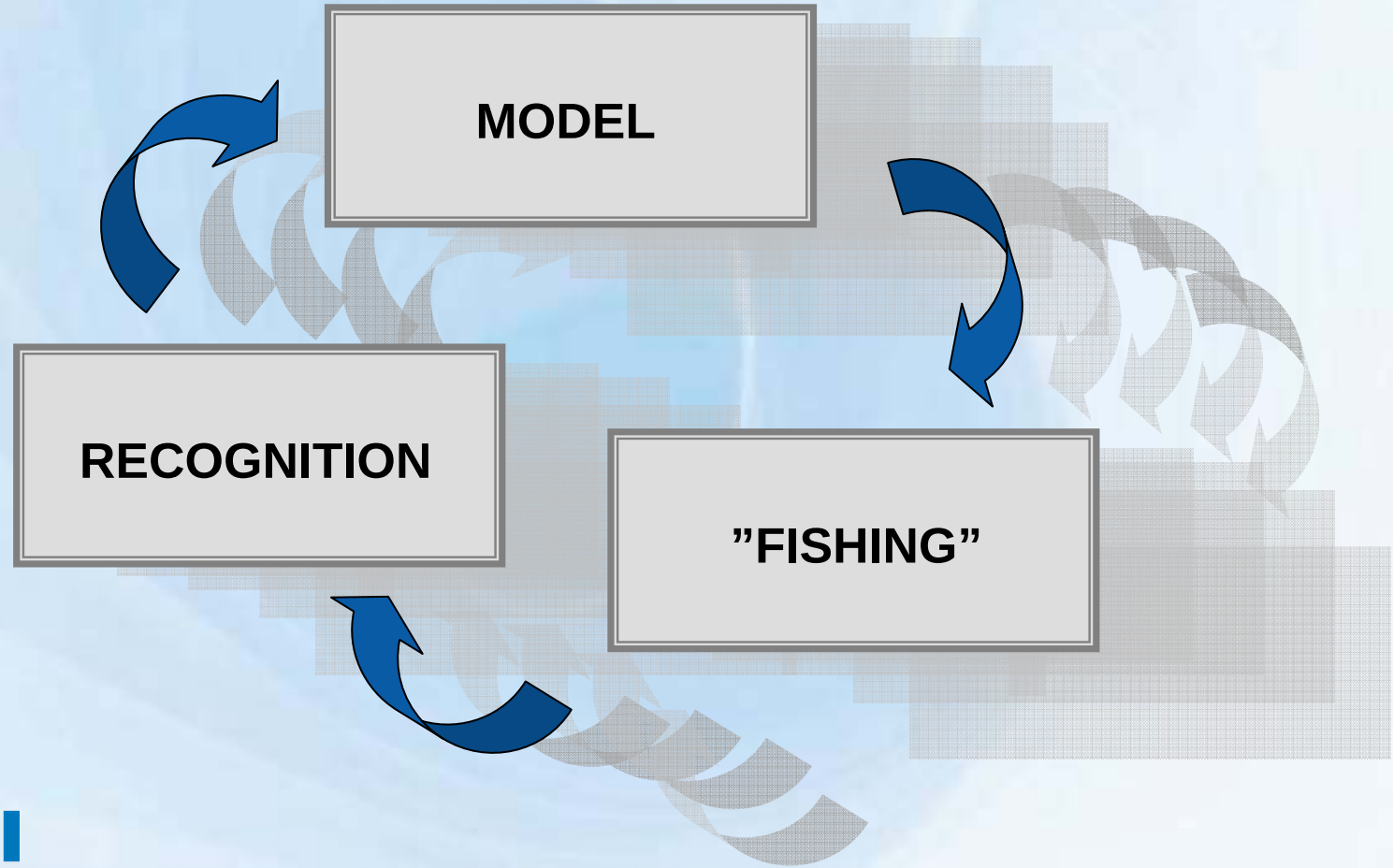
”Malaria troops may sue DoD”

”Smuggling of Radioactive sources”

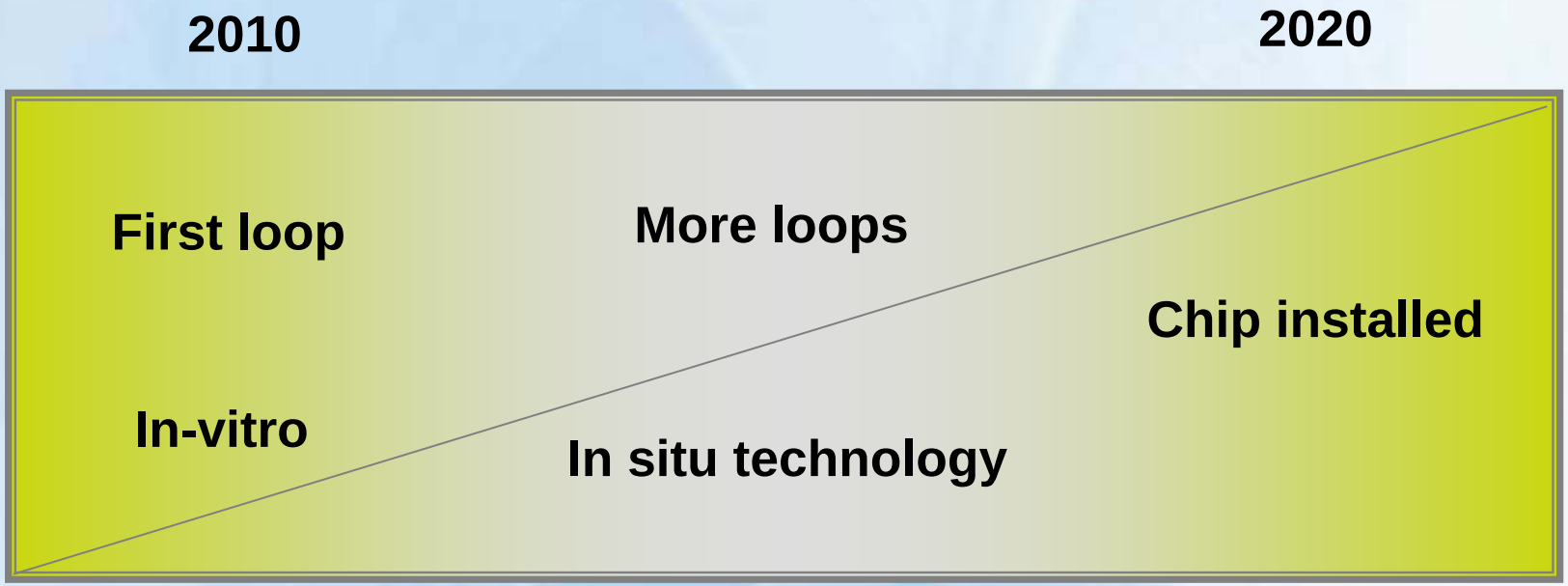
Biomarkers


Exposure
Effect
Exposed Substance
Metabolite
Adducts
(DNA/Protein)
Enzymes
Peptides
Proteins
Internal dose
Biologically active dose
Early biological effects
Altered structure/ function
Symptom
Exposure

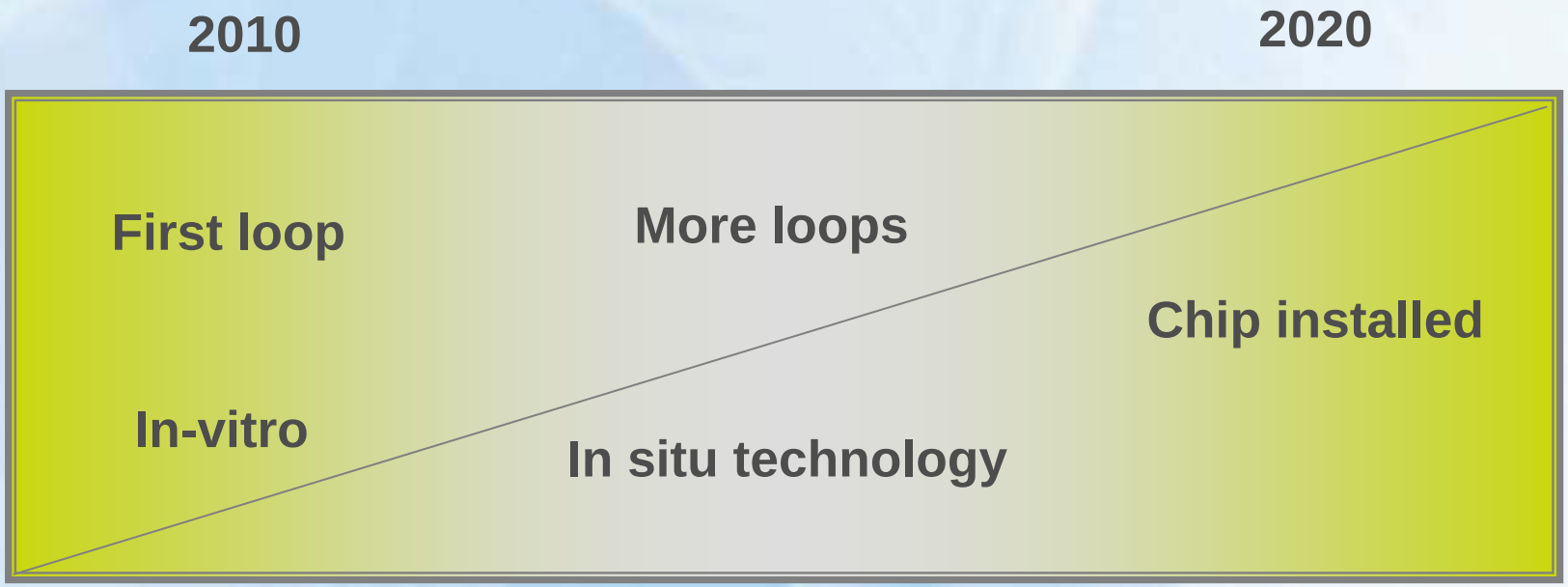
Principle of Work



Time - Line


2010
2020
First loop
More loops
Chip installed
In-vitro
In situ technology

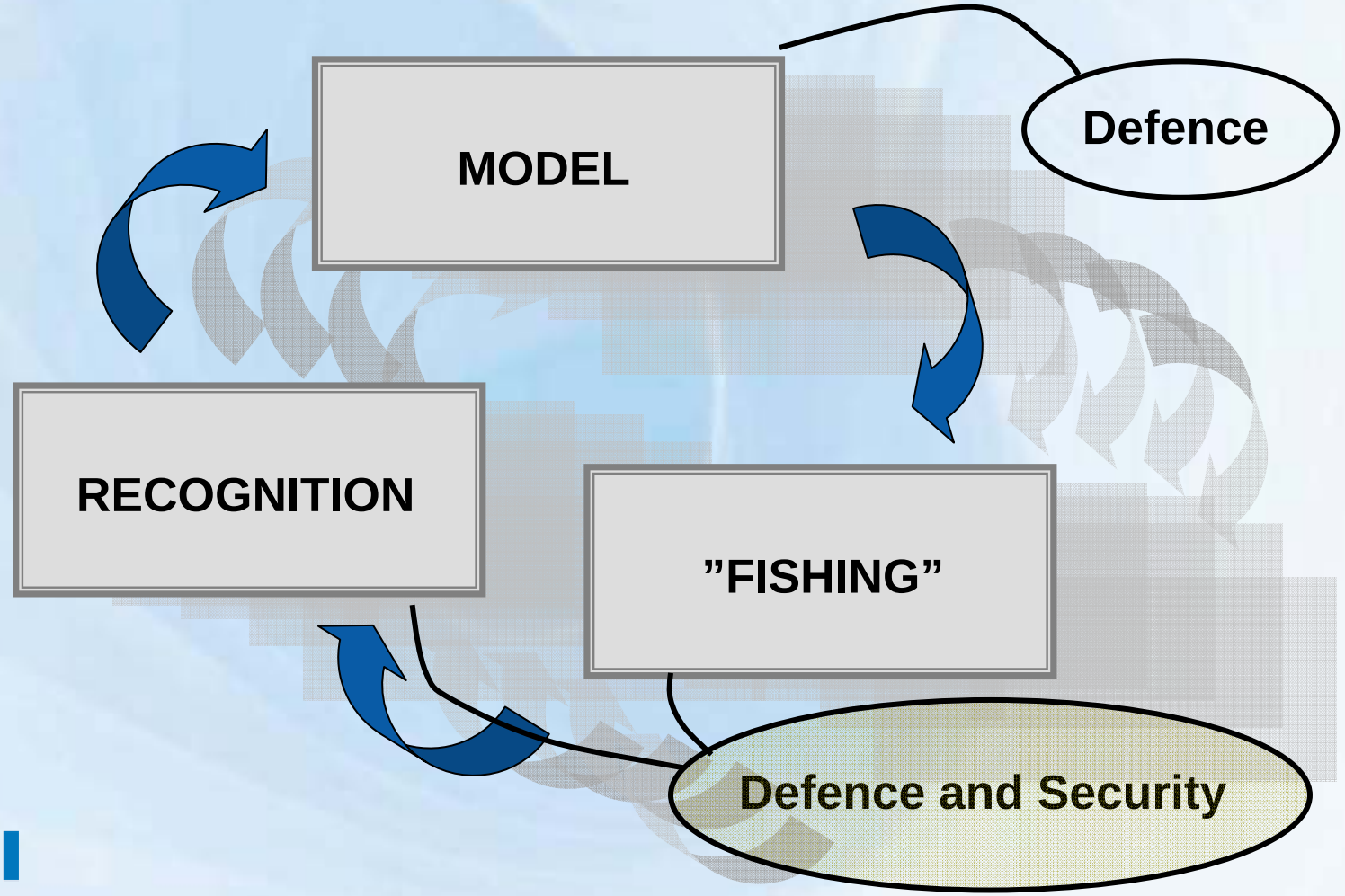
Venture capital

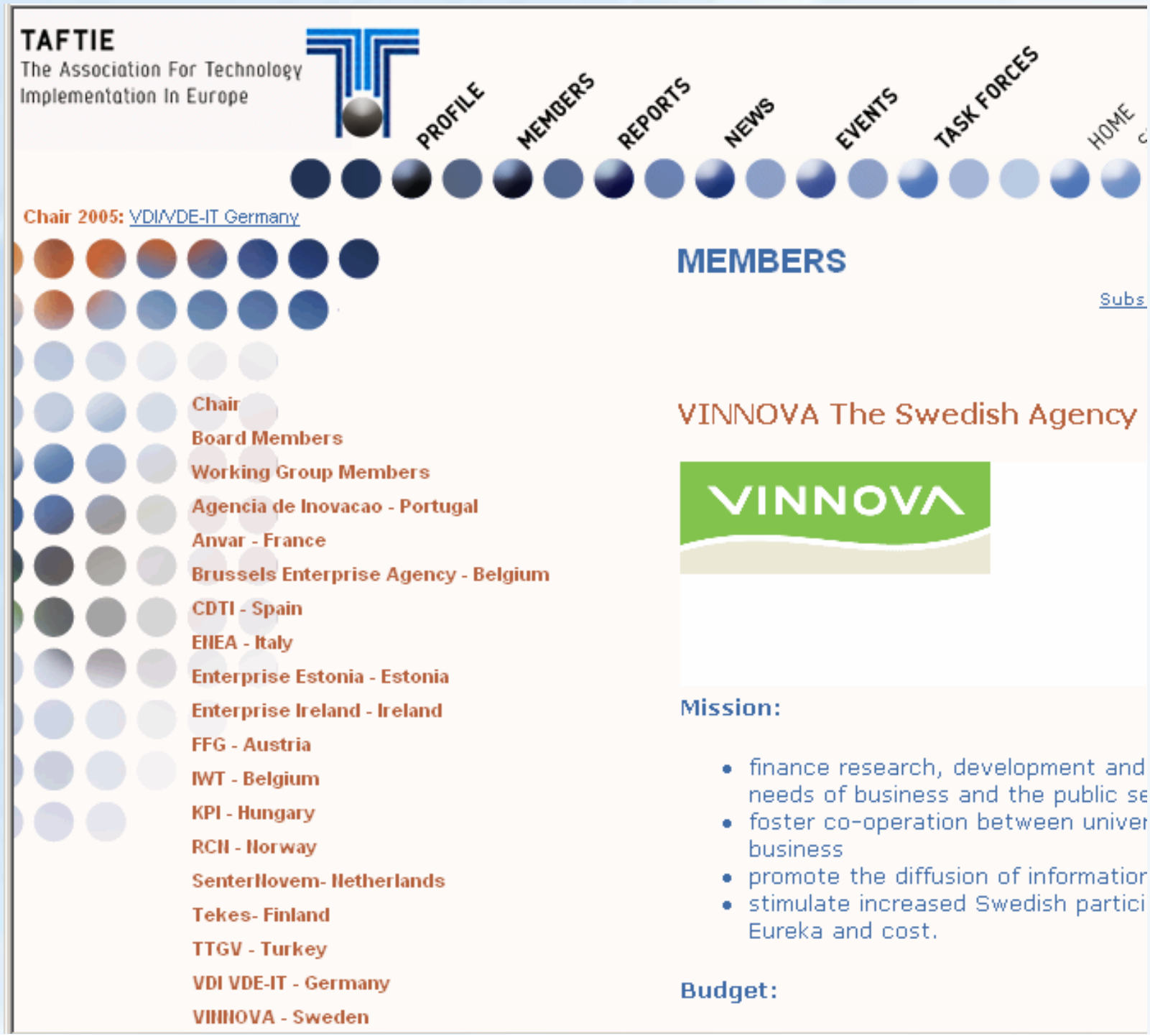


Security Research **Defence Research**

Private

Principle of Work

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Enterprise Estonia - Estonia
Enterprise Ireland - Ireland
FFG - Austria
IWT - Belgium
KPI - Hungary
RCN - Norway
SenterNovem- Netherlands
Tekes- Finland
TTGV - Turkey
VDI VDE-IT - Germany
VINNOVA - Sweden
VINNOVA The Swedish Agency
VINNOVA
Mission:
finance research, development and
needs of business and the public se
foster co-operation between univer
business
promote the diffusion of informatior
stimulate increased Swedish partici
Eureka and cost.
Budget:

2005-02-10

Suggested Swedish strategy for Security Research

Two agencies VINNOVA and SEMA (KBM)

Facilitate participation in EU and US programes

Swedish Nisches (It, BC, Communication, Net-working)

150 M SEK

COMMISSION OF THE EUROPEAN COMMUNITIES

COMMISSION COMMUNICATION

On the implementation for the Preparatory Action on the enhancement of the European industrial potential in the field of Security research, Towards a programme to advance European security through Research and Technology

- **PASR**
- **7th Framework Programe**
- **Different DGs**

- **Cutting Edge Technology to Protect America**
- **Building an Enduring Research Capability**
- **Supporting Critical Infrastructure Protection through Research & DevelopmentTurning Ideas into Reality**
- **Strengthening, Broadening U.S. Leadership in Science and Technology**
- **Research Areas (Portfolios)**


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Defense Advanced Research Projects Agency
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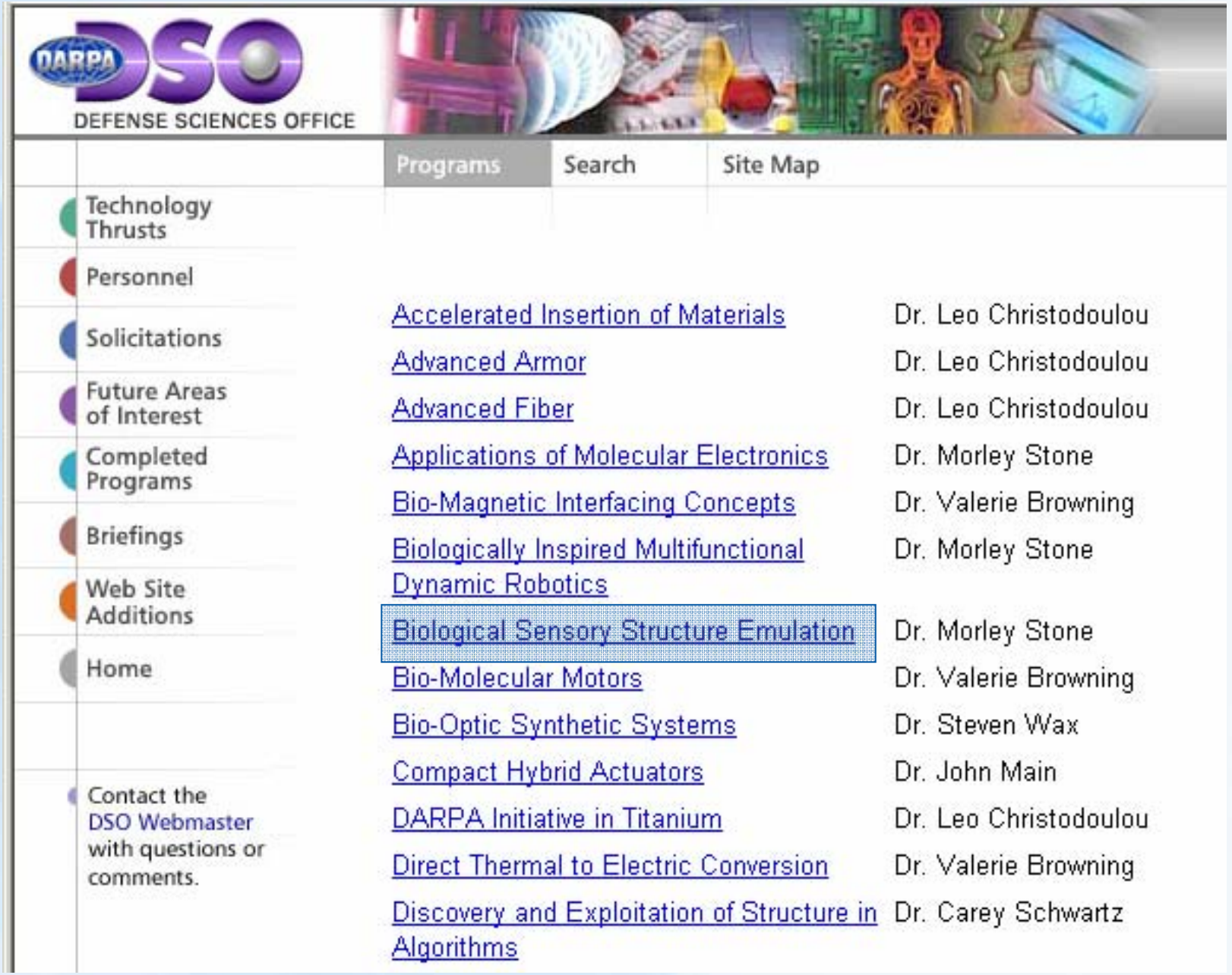
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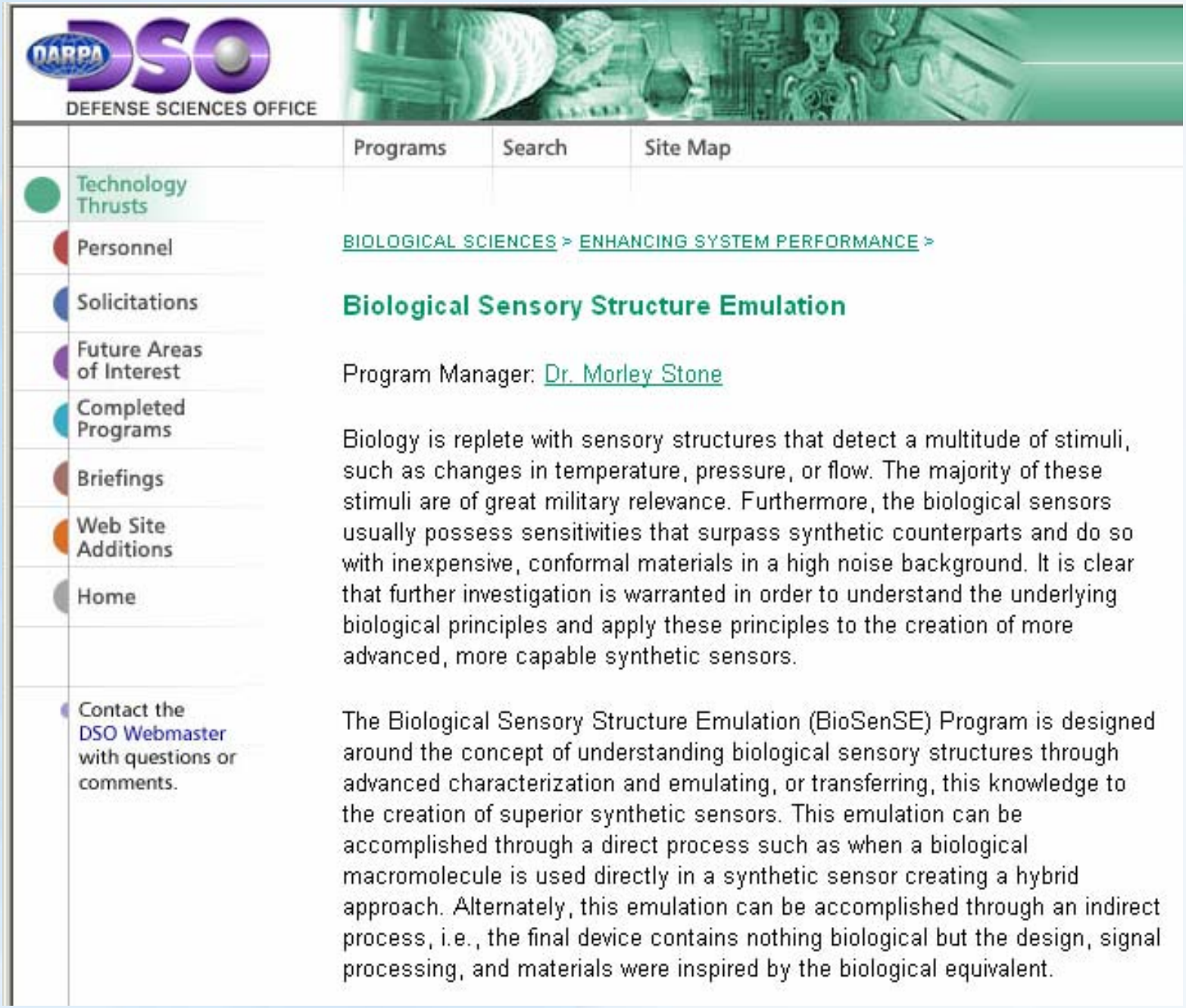
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Biological Sensory Structure Emulation
Program Manager: Dr. Morley Stone
Biology is replete with sensory structures that detect a multitude of stimuli, such as changes in temperature, pressure, or flow. The majority of these stimuli are of great military relevance. Furthermore, the biological sensors usually possess sensitivities that surpass synthetic counterparts and do so with inexpensive, conformal materials in a high noise background. It is clear that further investigation is warranted in order to understand the underlying biological principles and apply these principles to the creation of more advanced, more capable synthetic sensors.
The Biological Sensory Structure Emulation (BioSenSE) Program is designed around the concept of understanding biological sensory structures through advanced characterization and emulating, or transferring, this knowledge to the creation of superior synthetic sensors. This emulation can be accomplished through a direct process such as when a biological macromolecule is used directly in a synthetic sensor creating a hybrid approach. Alternately, this emulation can be accomplished through an indirect process, i.e., the final device contains nothing biological but the design, signal processing, and materials were inspired by the biological equivalent.

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