

Notes

dstl **Synthetic Biology: Good or Evil**

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Dstl - who we are

- MOD's Science and Technology (S&T) agent
- Executive Agency plus Trading Fund
- 100% contract funded
- Turnover (2009/10) £433 million, assets £225 million
- £70M work placed with industry / academia
- 3700 staff (including 100 military) > 70% active scientists, engineers and analysts
- Integral part of the UK Government and MOD

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Dstl - What we do

- The Defence Science and Technology Laboratory (Dstl) is responsible for the science and technology agenda in UK defence.
- The range of our expertise and the breadth of our remit enables us to define priorities and lead the response to UK Ministry of Defence's (MOD) science and technology requirements.
- Our mission is to create the winning edge for UK Forces and Government through the best use of science and technology, and our vision is to be the indispensable source of science and technology at the heart of defence.

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A well connected organisation

Our policy is to work in partnership with external providers and funders

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Synthetic biology

- Powered by leaps in DNA technology
 - Synthetic genomes
 - Whole genome shuffling
 - BioBricks
- Dual use technology
 - Potential massively beneficial
 - Potentially disruptive eg synthetic pathogens

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Relevance to MoD

Currently, Dstl doesn't have its own SynBio programs but we can see a number of possible areas where it could be integrated into our research programme to provide solutions

- Biofuels

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Notes

Relevance to MoD

Health care & Medicines

- Vaccines & Drugs
- Blood clotting agents
- Tissue engineering (Combat casualty care)
- Disease diagnostic

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Relevance to MoD

Environmental

- Bio-sensors, bioremediation

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Relevance to MoD

Other uses

- Bio-circuitry, bio-fabrication

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Synthetic biology - Misuse

- Understand the potential threat and mitigate
- Various organisations and governing bodies are looking into this
 - Australia group
 - BTWC
 - WHO
 - IGSC
 - PCSBI
 - LSE
 - RAE

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Responsibility

Education/ Training

Funding

Publishers/ Production

Scientist/ Innovator

Suppliers

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Misuse - Synthetic bacteria

Gibson *et al* (21010) Science 329(5987):52-6

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Synthetic Biology - Summary

- The benefits of synthetic biology are exciting
- Dstl will continue to watch the developments and incorporate technology as appropriate
- Dstl will continue to monitor the threat aspect and develop counter-acting technology as needed



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