

ASSESSMENT OF POTENTIAL LAWS-RELEVANT RESEARCH AT UCL

An Open-Source Review of Defence-Adjacent Activity (2021)

Author: Evan James Curran Ross

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KEY JUDGEMENTS

- UCL is conducting DSTL-funded research with potential dual-use relevance to LAWS, particularly in sensing, imaging, and navigation technologies.
- Transparency is limited, with incomplete project information and delayed FOI responses reducing visibility into the full scope of defence-linked research.
- Ethical oversight mechanisms are unclear, and open-source evidence suggests fragmented engagement with responsible innovation in defence contexts.
- Several UCL academics have historical or ongoing involvement in defence-relevant research, but no open-source evidence indicates active development of lethal autonomous systems.
- Further monitoring is required, particularly pending FOI disclosures and updates to research group project lists.

1. Executive Summary

This assessment evaluates open-source indicators of research at University College London (UCL) with potential relevance to Lethal Autonomous Weapons Systems (LAWS). The investigation focused on three areas:

1. research projects with dual-use or defence-adjacent applications,
2. institutional transparency and responsiveness,
3. the ethical environment surrounding AI and autonomy research.

Open-source collection identified two Defence Science and Technology Laboratory (DSTL)-funded projects with potential relevance to LAWS-enabling technologies: **Electromagnetic Imaging for Aviation Security** and **Quantum Sensors and Navigation**. Both support capabilities associated with autonomous systems, including sensing, target detection, and navigation. Public information on funding, timelines, and additional defence-linked projects remains limited.

UCL hosts several academics with prior defence-relevant research experience, but open sources provide no evidence of direct LAWS development. Ethical engagement appears fragmented, with limited visibility of sustained institutional mechanisms for responsible innovation in defence-adjacent research.

2. Intelligence Requirements

This assessment addresses the following questions:

1. What UCL research projects may contribute to enabling technologies for LAWS?
2. What defence or defence-industry funding is associated with these projects?
3. How transparent is UCL regarding defence-linked research?
4. What ethical frameworks or discussions exist around AI and autonomy research?
5. Which individuals or groups at UCL are most relevant to LAWS-adjacent research?

3. Methodology

This analysis draws exclusively on open-source information, including:

- UCL departmental and research group websites
- UKRI funding database
- Government press releases
- Academic publications
- Publicly available event recordings
- Freedom of Information (FOI) correspondence
- Professional profiles (e.g., LinkedIn, departmental pages)

All findings are derived from publicly accessible sources as of September 2021. No classified or proprietary information was used.

4. Findings

4.1 Research Projects Potentially Relevant to LAWS

Electromagnetic Imaging for Aviation Security

- Funder: DSTL via Defence and Security Accelerator (DASA)
- Amount: £332,520
- Lead: Prof. Ferruccio Renzoni
- Relevance: Supports core enabling functions for autonomous systems, including automated target detection and imagery analysis.
- Notes: Public information lacks detail on project duration and technical scope.

Quantum Sensors and Navigation

- Funder: DSTL
- Leads: Prof. Peter Barker; involvement from Prof. Renzoni
- Relevance: Supports supportive enabling functions such as autonomous navigation, situational awareness, and precision sensing.
- Notes: Limited open-source detail on funding and timelines.

Assessment: Both projects align with enabling technologies for autonomous systems but do not indicate direct involvement in LAWS development.

4.2 Transparency and FOI Response

- FOI request submitted 6 August 2021 seeking all defence-funded research in UCL Computer Science (2017–2021).
- UCL exceeded the statutory 20-day response period; follow-up messages received only automated acknowledgements.
- As of 29 September 2021, UCL stated the request was “being processed,” with no substantive disclosure.

Assessment: Delays may be attributable to COVID-19 disruptions, but the lack of timely response limits visibility into defence-linked research and complicates external oversight.

4.3 Ethical Environment

Open-source indicators suggest fragmented ethical engagement:

- UCL hosted an AI Insights event series (2020) addressing issues such as algorithmic bias.
- Attempts to contact relevant ethics researchers (Dr Emre Kazim, Dr Stephen Hughes, Dr Jack Stilgoe) yielded no responses.
- No clear evidence of sustained, structured ethics oversight specifically addressing defence-related AI research.

- UCL is a signatory of the Future of Life Institute pledge, but implementation mechanisms are not visible in open sources.

Assessment: Ethical discourse is present but fragmented, with limited evidence of sustained oversight mechanisms for defence-adjacent AI research.

4.4 Key Individuals

Prof. Stephen Hailes

- Head of Computer Science.
- Led SUAAVE (2008–2012), a UAV swarm research project funded by EPSRC with BAE Systems and Thales involvement.
- Research focused on sensing and coordination, not lethality.

Prof. Simon Julier

- Professor of Situation Awareness Systems.
- Co-authored UAV sensing research; prior work at the US Naval Research Laboratory.

Prof. Edward Grefenstette

- Honorary Associate Professor; machine learning researcher.
- Signatory of the Future of Life Institute pledge.

Assessment: These individuals have relevant expertise, but no open-source evidence links them to LAWS development.

5. Assessment

UCL conducts research contributing to enabling technologies for autonomous systems, particularly in sensing and navigation. While these technologies have potential military applications, open-source evidence does not indicate direct involvement in lethal autonomous weapons development.

Transparency challenges — including incomplete project listings and delayed FOI responses — limit external visibility. Ethical engagement exists but appears inconsistent, with unclear mechanisms for ensuring responsible innovation in defence-adjacent research.

Pending FOI disclosures may reveal additional projects or funding streams not currently visible through open sources.

6. Indicators & Early Warning Signals

The following indicators would suggest increased LAWS-relevant activity at UCL:

- New DSTL or defence-industry funding announcements

- Expansion of autonomous systems research groups
- Recruitment for defence-focused AI or robotics roles
- Increased collaboration with defence primes (e.g., BAE, Thales, QinetiQ)
- Publication of research on autonomous targeting, decision-making, or weapons integration
- Establishment of dedicated defence-AI ethics committees or oversight bodies

7. Limitations

- FOI request pending; findings may be incomplete.
- Some research groups provide minimal public project information.
- COVID-19 disruptions may have affected transparency and responsiveness.
- Open-source data may not capture classified or sensitive research partnerships.

8. Conclusion

Open-source evidence indicates that UCL is engaged in defence-funded research with potential relevance to LAWS enabling technologies, particularly in sensing and navigation. However, there is no indication of direct involvement in lethal autonomous weapons development. Transparency gaps and limited ethical visibility warrant continued monitoring, particularly as FOI disclosures may clarify the scope of defence-linked research and institutional oversight practices.