Contributions to the Report of the Secretary General on Disarmament and Non-Proliferation Education, Received by the Office for Disarmament Affairs

**Ethics + Emerging Sciences Group** (Cal Poly)

*California Polytechnic State University*

*1 Grand Avenue*

*Philosophy Department*

*San Luis Obispo, California, 93407 USA*

**Executive Summary**

In the last two years, the Ethics + Emerging Sciences Group—based at California Polytechnic State University, San Luis Obispo—continues to study new ethical, legal, and policy issues arising from emerging technologies, notably in security, defense, and intelligence. This includes artificial intelligence, robotics, cybersecurity, human enhancements, Internet of Things, nonlethal weapons, pandemic surveillance, and more.

Of particular interest, we are studying the role of emerging technologies in frontiers, such as the Arctic and outer space, including the conflicts they may create, given the lack of governance inherent to frontiers. **Outer space cybersecurity** is especially concerning given the strategic importance of the domain; we have a new funded project in this area.

More than academics, we advise industry, governmental agencies, and NGOs in technology ethics, including UNIDIR and other defense organizations.

**Overview**

The Ethics + Emerging Sciences Group focuses on ethical, legal, and policy concerns arising from novel sciences and technologies—particularly on military and related systems, including robotics, cyberweapons, human enhancements, nonlethal weapons, space systems, and more. At the United Nations, we have participated in [CCW](http://www.ccw.org) and [UNIDIR](http://www.unidir.org) meetings in previous years; and we continue to provide ethics counsel to defense organizations and NGOs globally.

As a research and education group, we are non-partisan in our views, often negotiating a sensible path between the hype and the gloom-and-doom that surround emerging technologies. Please visit our site for publications, expert meetings organized, and media interviews: [http://ethics.calpoly.edu](http://ethics.calpoly.edu)
The following are representative examples of our research, including popular writing and university courses. (Our many talks globally are not included here, for space considerations.)

**Currently Funded Projects**


**Recent Work with Defense Organizations**

1. Delivered the ethics briefing to and participated in a series of workshop on Internet of Things/wearables and military performance and health, hosted by the DARPA's Information Science and Technology Study Group (2022).

**Workshops Organized**

2. **AI and Future Arctic Conflicts**, funded by Canadian Institute for Advanced Research, Carleton University (2020; to be rescheduled due to Covid-19).

**Journal Papers + Book Chapters**


Reports


Media Articles

1. Winning the Battle, Losing the War (on AI policing), Philosopher’s Magazine, 2 June 2020.

News Interviews

1. Russia-Ukraine War Faces Devastating Digital Attacks by “Forces” Armed with Viruses and Other Tech Weapons, Independent Online (South Africa), 2 March 2022.

2. NYPD Latest Digidogs Robot Program Raises Serious Concerns, Tech The Lead, 29 March 2021.


University Courses

1. PHIL 323: Ethics, Science & Technology. The class discusses ethical, legal, and policy issues—including tensions with the laws of armed conflict—related to military robotics, AI, cyberoperations, soldier enhancements, space affairs, nanotechnology, and more.
2. PHIL 327: **Robot Ethics.** This class discusses military ethics, risk, and robots, including issues of how robots could (not) be involved in just wars, how robot (dis)armament could proceed, how it could aid (or hamper) human disarmament, up to and including even the eventual militarization of space; and how robots could become a permanent military presence in space, or contrariwise, how robots would play a crucial role in verifying space disarmament.

3. PHIL 328: **Technologies & Ethics of War.** This class discusses the just war tradition and how the tradition has been complicated and challenged by emerging technologies for the last several hundred years, including: discussions of pacifism, nuclear weapons, nuclear deterrence, and disarmament, and monitoring IHL compliance from space (such as human rights abuses, troop movements and concentrations, and disarmament).

4. PHIL 439: Special Topics: **Cyberwarfare Ethics.** This class provides students with the primary “tools” needed to be able to evaluate the ethics of cyberwarfare, including: just war theory, normative ethics, and the laws of armed conflict. Specific topics include: means and methods questions (how cyberweapons should be designed and used), targeting and responsibility for attacks, and the role of both state and non-state actors. The course closes with a speculative discussion of the possible ways that the cyber environment might change in the medium- to long-term future.

5. PHIL 439: Special Topics: **Philosophy of Fascism.** This course is an exploration of the theoretical components of the fascist political philosophy and an analysis of some primary and secondary arguments in its favor, and criticism of those arguments. It includes a discussion of fascism’s tendency towards militarism, expansionism, imperialism and war, and whether those aspects of fascism are essential.

6. Other relevant courses under development, e.g., ethics of outer space development, as well as a **bioethics** course that includes a key focus on security and defense applications.

**Contact Information**

Prof. Patrick Lin  
Director, Ethics + Emerging Sciences Group  
Professor, Philosophy Department  
California Polytechnic State University  
San Luis Obispo, CA 93407 USA

Site:  [http://ethics.calpoly.edu](http://ethics.calpoly.edu)  
Email:  [palin@calpoly.edu](mailto:palin@calpoly.edu)

_Last updated on 3 May 2022._