Regulation of the Use of New Laser Technology in Armed Conflict

Kobi Leins, www.premt.net

Governance of Emerging Technologies: Law, Policy and Ethics
Tempe, 24-26 May 2016
What size is nanoscale?

C Huang & M Huang, 'The Scale of the Universe 2' (2012), http://htwins.net/scale2/
Nanotechnology

• More efficient energy storage

• Advanced photovoltaics (the method of conversion of solar energy into electricity)

• Improved military protective equipment

• Improved materials, such as gas filters, masks and materials for tanks and protective clothing for soldiers

• Biomedical applications
Lasers

‘US navy demonstrates ship-based laser weapon - video’
Nanolasers

- Metamaterials
- Photonics
- Optogenetics
Optogenetics

- Insertion of a virus
- Nanolaser
- Opsins
- Modifies neural responses and reactions
Legal Framework: Treaties

- 1925 Geneva Protocol
- 1972 Biological Weapons Convention
- 1993 Chemical Weapons Convention
- Protocol on Blinding Laser Weapons (Protocol IV of CCW)
- Article 36 of 1949 Geneva Conventions (Additional Protocol I)
General legal Principles, Human Rights Law & Environmental Law

- Military Necessity vs Humanity
- Proportionality
- Distinction
- Prohibition on Indiscriminate Attack
- Precautions in Attack
- Prohibitions on unnecessary suffering
Conclusion

• No one-size fits all regulatory system, even for one type of nanotechnology

• Military research begs question re timing of legal review

• Dual purpose?
Questions?