### TO THE FUTURE:

Non-Lethal Capabilities Technologies in the 21st Century



**Presentation To** 

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## Why Non-Lethals?

Force Protection

- Assistance in Target Discrimination
  - •Tourist or Terrorist?
- Urban Battlespace

From Rubber bullets...
To

**Directed Energy** ...

From this....







# Chemical-based Technologies To The Future

### New Capabilities...

- Calmatives
- Malodorants
- Anti-Traction Materials
- Depolymerizers

### Challenges...

- Chemical Weapons Convention
- Reliable, repeatable bio-effects over the wide range of the population









# **Ancillary Technologies To The Future**

### New Capabilities...

- Long range, precision delivery
- Microencapsulation
- Frangible Casings

### Challenges...

- Survival of launch environment
- Terminal kinetic energy







# To The Future: Common Themes

- Non-lethal counter-personnel capabilities will attack a target's senses or cognitive / motor abilities
  - Reliable, repeatable, universal and reversible bio-effects are critical
  - Accurate, long range payload delivery along with a non-lethal delivery means

