

**2025: A Forward
Engagement Agenda for
the U.S.**

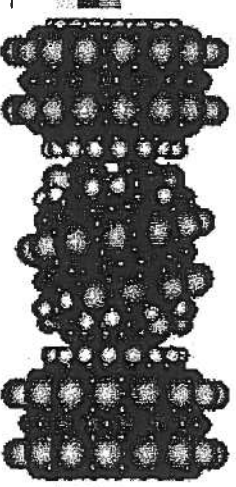
**Capstone Seminar - Leon Fuerth
Elliott School of International Affairs**

May 3, 2001

Briefing Agenda

- ✦ **Project Overview**
- ✦ **Technology**
- ✦ **Economic Development**
- ✦ **Future Warfare**
- ✦ **Global Environment**

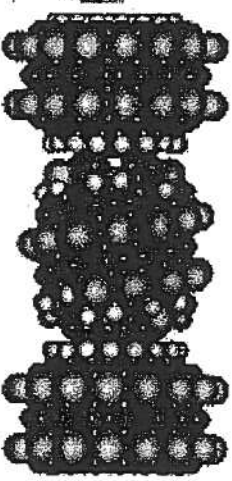
Technology



Nanotechnology:

- ✦ **Molecular Manufacturing**
 - Manipulating matter on a molecular level to create new products that are cleaner, stronger, lighter, and more precise
- ✦ **Implications for Industry**
- ✦ **Self-Replication**
 - Potential dangers from nanorobots

Technology

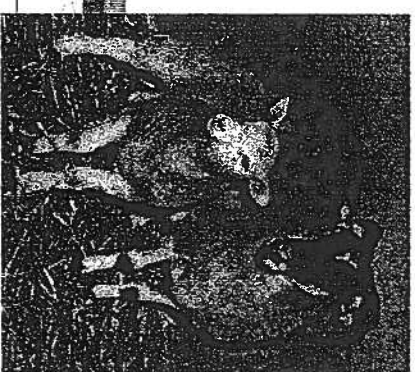


Nanotechnology:

Policy Recommendations

- ✦ **Industrial Research – Consumer Environment**
 - Institute an Office of Nano-Affairs under the Department of Commerce
- ✦ **Experimental Research – Classified Environment**
- ✦ **Export Control/Monitoring Regime**
- ✦ **Education**

Technology



Genetics and Biotechnology:

- ✦ **Medical Benefits**
 - Disease eradication
 - Organ renewal
- ✦ **Human Cloning**
 - Potential misuses
- ✦ **Genetically Modified Organisms (GMOs)**
 - Impact on developing countries

Technology



Genetics and Biotechnology:

Policy Recommendations

- ✦ **Continued Support of the NIH Budget for R&D of Biotechnology**
- ✦ **Establish International Advisory Committee on the Ethics of Cloning Research**
- ✦ **Food and Drug Administration (FDA) Implement Tighter Restrictions**

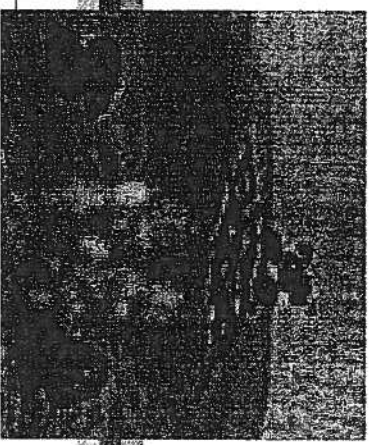
Technology



Space Technologies:

- ✦ **R&D – Public vs. Private Sector**
 - Reduction in government-funded R&D in physical sciences
 - Control of space and space technology
- ✦ **Satellite Technology**
 - Proliferation of technology to developing countries, non-state actors
 - Impacts

Technology

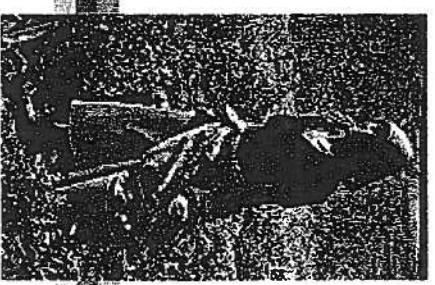


Space Technologies

Policy Recommendations:

- ✦ **Support GPS Sharing with Developing Countries**
 - Department of Transportation grants program
 - Tax-incentives to commercial providers
- ✦ **Encourage DoD to Supplement NRO Satellites w/Commercial Imagery**
- ✦ **Education**

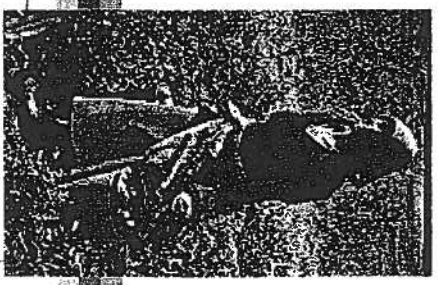
Economic Development



North-South Disparity

- ✦ **By 2025, Much of the World's Population Will Live in Poverty**
- ✦ **Poor Countries Will Be Sources of Asymmetric Threats and Violent Instability**

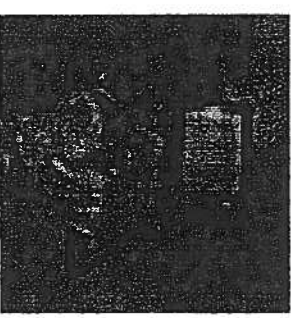
Economic Development



North-South Disparity *Policy Recommendations*

- ✦ **U.S. Must Alter Its Development Aid Strategy**
 - Fully fund aid organizations
 - Focus not only on relief, but also on education, micro enterprise, and the status of women
 - Complement support for mid-level developing countries with tech sharing

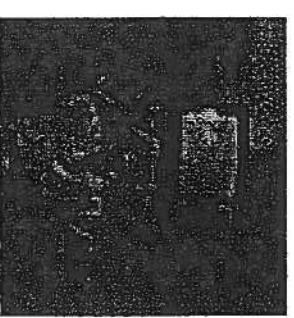
Economic Development



Growing Global Middle Class

- ✦ **In 20 Years, the Global Middle Class Will Include 3 Billion People – Many in China and India**
 - **New middle class will compete for resources like food, water, and oil**
 - **Will also provide robust new market for U.S. goods and services**

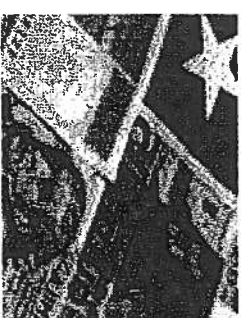
Economic Development



Growing Global Middle Class Policy Recommendations

- ✦ **Focus on Energy, Trade Linkages, and Technology**
 - **Alter U.S. dependence on oil**
 - **Provide funding for trade linkages**
 - **Agricultural technology transfers**

Economic Development

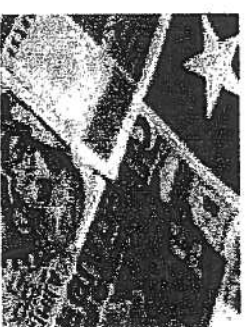


Financial Markets

✦ Increased Capital Movement and Market Linkages Will Lead to Increased Market Volatility

- U.S. and world economies will be more vulnerable to large-scale depressions and crises
- Financial-terrorism
- Large-scale crises make bailouts difficult

Economic Development

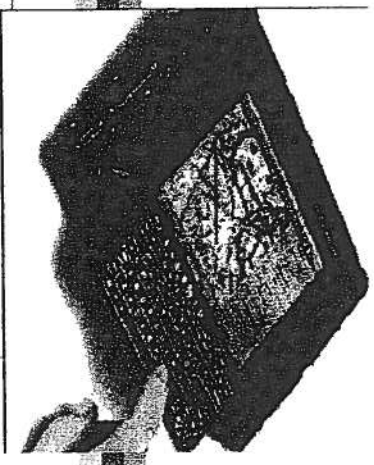


Financial Markets

Policy Recommendations

- ✦ **Transparency of U.S. Financial Institutions**
- ✦ **Institute a New International Fund**
- ✦ **Develop Contingency Plans for Financial Crises**

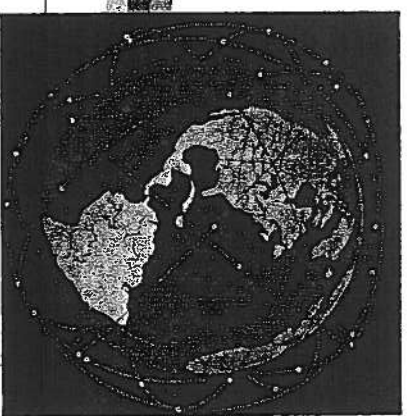
Warfare



Technological Innovations

- ✦ **Revolution in Military Affairs (RMA)**
- ✦ **Information Revolution**
- ✦ **The Diminishing Human Role**
 - **UAVs**
 - **Robotics**
- ✦ **Improving Capabilities**
 - **Nano-weaponry**
 - **Genetics and Bio-engineering**

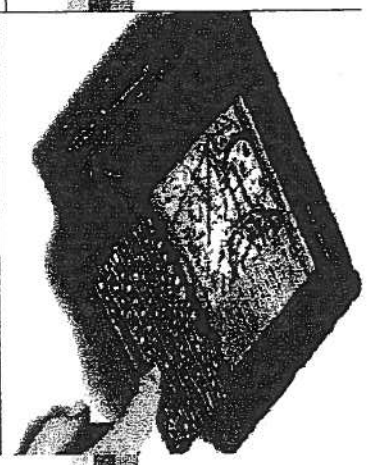
Warfare



Future Threats

- ✦ **Vulnerability of US Forces**
 - “Bronze Medal” technology
- ✦ **“Smart Weapons” Proliferation**
 - PGMs and stealth technology
- ✦ **Information Warfare**
 - Space access and space denial
- ✦ **Regional Players**
 - Competitors: China, Russia, India

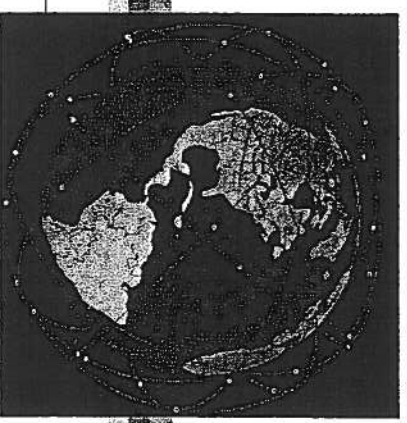
Warfare



Technological Innovations *Policy Recommendations*

- ✦ **Increase R&D for RMA initiatives**
- ✦ **Create More Efficient Procurement System**
- ✦ **Space Dominance**
 - **Increase anti-satellite and space to ground weapons**

Warfare



Future Threats

Policy Recommendations

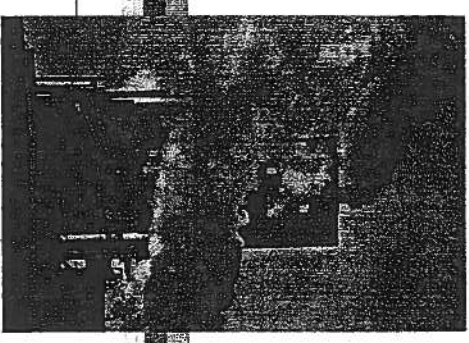
- ✦ **Importance of Strategic Intelligence**
 - Information sharing between commercial and military systems, allies, and periphery
- ✦ **Information Warfare**
 - Integrating information systems
- ✦ **Home Land Defense**

Global Environment

Environmental Degradation

✦ **By 2025, Environmental Degradation Will Threaten International Stability**

- **Climate Change**
- **Water and Air Quality Deterioration**
- **Environmental Refugees**
- **Loss of Irrigable Land**

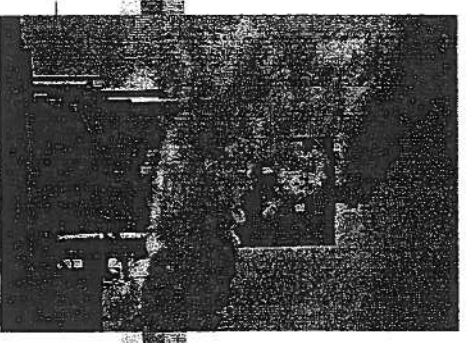


Global Environment

Environmental Degradation

Policy Recommendations

- ✦ **Organize a Comprehensive International Environmental Treaty**
- ✦ **Create Incentive to Reduce Consumer Emissions of Greenhouse Gases**
- ✦ **Pursue Biotechnology to Ameliorate Land Quality**

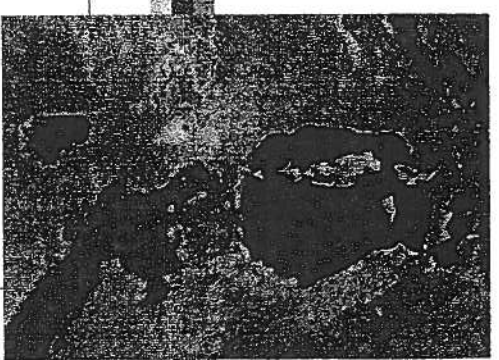


Global Environment

Water Shortages

✦ **By 2025, a Majority of the World's Population Will Live in "Water-stressed" Countries**

- **Conflict over water**
- **Water refugees**



Global Environment

Water Shortages

Policy Recommendations

- ✦ **Establish International, Multilateral Water Accord**
- ✦ **Develop Water Purification and Conservation Technology**



Global Environment



Energy

- ✦ **By 2025, Demand for Energy Will Increase 60%**
- ✦ **Consumption of Oil and Natural Gas Greatly Increased Due to Industrialization of Asia and Growing Middle Class**
- ✦ **Continued Fossil-fuel Consumption Will Damage Air and Water Quality**
- ✦ **No Current Incentive to Develop New Energy Technologies**

Global Environment



Energy

Policy Recommendations

- ✦ Pursue R&D of Nuclear Fusion Technology
- ✦ Create a National Solar Energy Program
- ✦ Offer Technical Assistance to Developing Countries
- ✦ Eliminate Subsidies to Current Energy Producers

2025

The future holds many opportunities and many challenges. The actions we take today can dramatically and positively impact the future.

Questions?