

**Nanyang Technological University**  
**Para Limes**  
**“Disrupted balance – Societies at risk”**

Mandarin Orchard Hotel  
333 Orchard Road, Singapore 238867

*Societal resilience: Lessons from Herman Kahn*  
*The Use of Foresight Methodologies to Improve Public Policy*

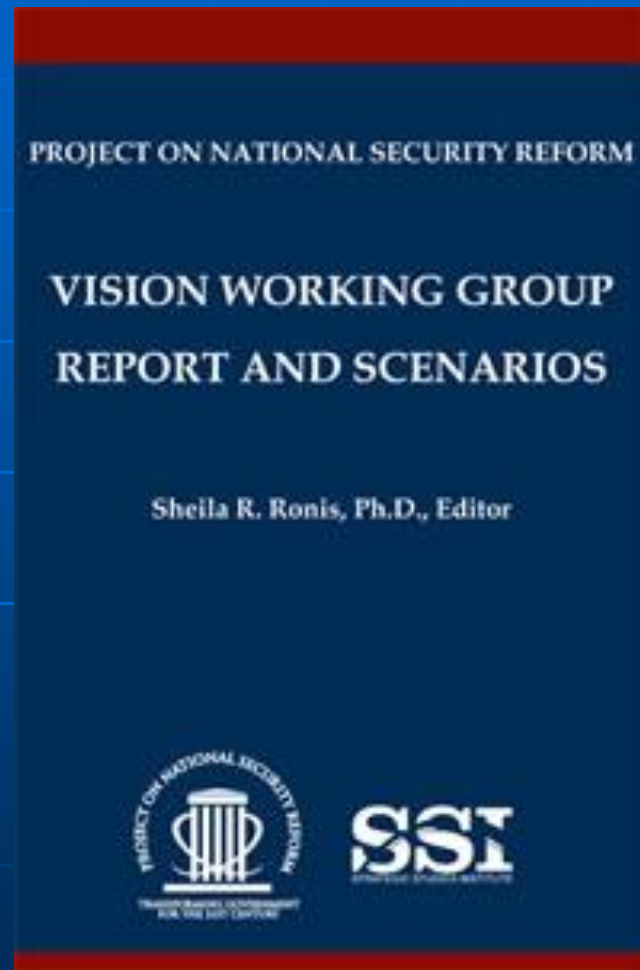
A Proposal for the  
U.S. Executive Office of the President of the United States

Remarks By:

Sheila R. Ronis, Ph.D.  
Chair and Professor, Department of Management  
Director, Center for Complex and Strategic Decisions  
Walsh College

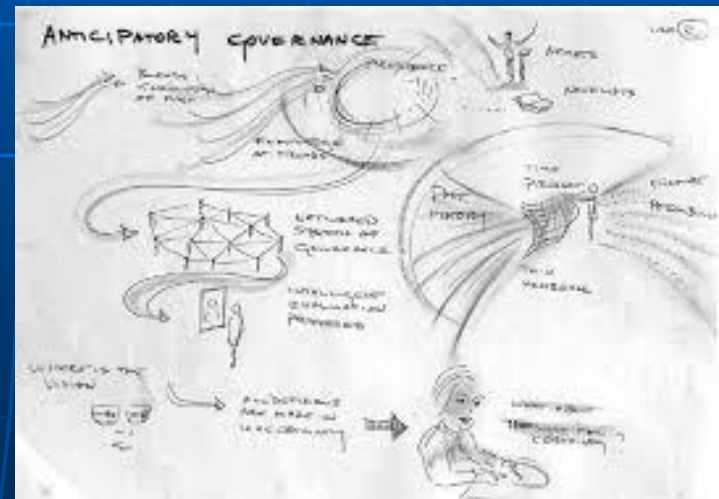
6 December 2016

# The Center for Complex and Strategic Decisions



# The Center for Complex and Strategic Decisions

The nation needs to support strategic decision-making in an interagency whole-of-government manner at the highest levels for issues of national importance and/or security.



Leon Fuerth, 2009

# The Center for Complex and Strategic Decisions

## The National Security Strategy

# The Center for Complex and Strategic Decisions

*Nearly twenty-five years ago...*

# The Center for Complex and Strategic Decisions

The United States does not develop whole of government “Grand Strategies.”

# The Center for Complex and Strategic Decisions

## Private Sector Management Tools

# The Center for Complex and Strategic Decisions

“What mechanisms should the  
U.S. government develop?”

# The Center for Complex and Strategic Decisions

“We are now concerned with the peace of the entire world and the peace can only be maintained by the strong.”

- General George C. Marshall

# The Center for Complex and Strategic Decisions

## A Systems Approach...

# The Center for Complex and Strategic Decisions

U.S. security is rooted in the successful integration of all elements of national power.

# The Center for Complex and Strategic Decisions

“What is the basis for re-thinking the national security system?”

# The Center for Complex and Strategic Decisions

## The arena of National Security

# The Center for Complex and Strategic Decisions

“Threats”

# The Center for Complex and Strategic Decisions

“Opportunities”

# The Center for Complex and Strategic Decisions

Any situation, condition, or entity that has the potential to enhance or degrade the viability and vitality of the nation.

# The Center for Complex and Strategic Decisions

The National Security System would be responsible for and measured by:

- The viability and vitality of the nation,

# The Center for Complex and Strategic Decisions

The National Security System would be responsible for and measured by:

- The viability and vitality of the nation,
- Peaceful and positive development throughout the countries of every region

# The Center for Complex and Strategic Decisions

The National Security System would be responsible for and measured by:

- The viability and vitality of the nation,
- Peaceful and positive development throughout the countries of every region
- Cooperation and collaboration around the globe

# The Center for Complex and Strategic Decisions

## National Security System

# The Center for Complex and Strategic Decisions

## Complex Adaptive System

# The Center for Complex and Strategic Decisions

## Complex Adaptive System

- Share information and collaborate horizontally

# The Center for Complex and Strategic Decisions

## Complex Adaptive System

- Share information and collaborate horizontally
- Accommodate unanticipated needs and partnerships

# The Center for Complex and Strategic Decisions

## Complex Adaptive System

- Share information and collaborate horizontally
- Accommodate unanticipated needs and partnerships
- Ensure agility in the face of uncertainty

# The Center for Complex and Strategic Decisions

## Complex Adaptive System

- Share information and collaborate horizontally
- Accommodate unanticipated needs and partnerships
- Ensure agility in the face of uncertainty
- Incorporate ad-hoc structures and processes, and

# The Center for Complex and Strategic Decisions

## Complex Adaptive System

- Share information and collaborate horizontally
- Accommodate unanticipated needs and partnerships
- Ensure agility in the face of uncertainty
- Incorporate ad-hoc structures and processes, and
- Maintain a long-term view

# The Center for Complex and Strategic Decisions

## Complex System of Complex Systems

# The Center for Complex and Strategic Decisions

## Predict and Control

# The Center for Complex and Strategic Decisions

Troubling...

# The Center for Complex and Strategic Decisions

Trying to explain...

# The Center for Complex and Strategic Decisions

“If you know the enemy and you know yourself, you need not fear the result of a hundred battles.

If you know yourself but not the enemy, for every victory gained, you will suffer a defeat.

But if you know neither yourself nor the enemy, you will succumb in every battle.”

- Suz Tzu,  
*The Art of War*,  
~400 B.C.

# The Center for Complex and Strategic Decisions

“Plans are worthless, but planning is everything”

- President Dwight D. Eisenhower

# The Center for Complex and Strategic Decisions

Complex Systems Cannot be Controlled!

# The Center for Complex and Strategic Decisions

## Center for Complex and Strategic Decisions

# The Center for Complex and Strategic Decisions

Synthesize all of government solutions to complex system issues and problems, and sometimes “all of society.”

# The Center for Complex and Strategic Decisions

## Capabilities needed in the White House

# The Center for Complex and Strategic Decisions

Since The National Security Act of 1947 survived largely intact for sixty years, despite major social, technological, economic, environmental, and political changes, the Vision Working Group looked ahead about fifty years.

# The Center for Complex and Strategic Decisions

The Vision Working Group was asked to create scenarios that would provoke discussion and debate within the Project and hopefully lead to better, more resilient recommendations.

# The Center for Complex and Strategic Decisions

## The National Academies

# The Center for Complex and Strategic Decisions

## List of Experts across Disciplines

# The Center for Complex and Strategic Decisions

The questionnaire was sent to over 1500 experts who were queried via email about the future of their disciplines.

# The Center for Complex and Strategic Decisions

The experts' insights on future trends and milestones were aggregated, analyzed and synthesized to better understand the ways that the future could unfold.

# The Center for Complex and Strategic Decisions

Three time horizons:

2020

2040

2060

# The Center for Complex and Strategic Decisions

## Three Commandants at the National Defense University

# The Center for Complex and Strategic Decisions

The scenarios were then stress tested with the national security faculties

- at the National War College,
- the Industrial College of the Armed Forces, and
- the Joint Forces Staff College .

# The Center for Complex and Strategic Decisions

The five major solution sets of the Project were then stress tested by the Working Group Leaders.

# The Center for Complex and Strategic Decisions

Intentionally designed to stress the Working Group's recommendations from several angles.

# The Center for Complex and Strategic Decisions

## Five General Questions

# The Center for Complex and Strategic Decisions

- **Stressors in the scenario?**

# The Center for Complex and Strategic Decisions

- **Stressors in the scenario?**
- **Was the system able to anticipate the scenario problems**

# The Center for Complex and Strategic Decisions

- **Stressors in the scenario?**
- **Was the system able to anticipate the scenario problems**
- **How well was the system able to react?**

# The Center for Complex and Strategic Decisions

- **Stressors in the scenario?**
- **Was the system able to anticipate the scenario problems**
- **How well was the system able to react?**
- **How well was the system able to recover?**

# The Center for Complex and Strategic Decisions

- **Stressors in the scenario?**
- **Was the system able to anticipate the scenario problems**
- **How well was the system able to react?**
- **How well was the system able to recover?**
- **How well does the system function as a whole?**

# The Center for Complex and Strategic Decisions

## Three General Questions

# The Center for Complex and Strategic Decisions

1.How will the recommendations function in the scenario presented?

# The Center for Complex and Strategic Decisions

1. How will the recommendations function in the scenario presented?
2. Are there problems or solutions identified that we have not addressed?

# The Center for Complex and Strategic Decisions

- 1.How will the recommendations function in the scenario presented?
- 2.Are there problems or solutions identified that we have not addressed?
- 3.If this future is not desirable, what choices should we be making today to avoid it?

# The Center for Complex and Strategic Decisions

The 2020 scenarios include:

- Red Death

# The Center for Complex and Strategic Decisions

The 2020 scenarios include:

- Red Death
- The People's War

# The Center for Complex and Strategic Decisions

The 2020 scenarios include:

- Red Death
- The People's War
- A Grand Strategy

# The Center for Complex and Strategic Decisions

The 2040 scenarios include:

- A New Economy

# The Center for Complex and Strategic Decisions

The 2040 scenarios include:

- A New Economy
- Army of One

# The Center for Complex and Strategic Decisions

The 2040 scenarios include:

- A New Economy
- Army of One
- Who Holds the High Ground

# The Center for Complex and Strategic Decisions

The 2040 scenarios include:

- A New Economy
- Army of One
- Who Holds the High Ground
- A Brave New World

# The Center for Complex and Strategic Decisions

The 2060 scenarios include:

- A Warm Reception

# The Center for Complex and Strategic Decisions

The 2060 scenarios include:

- A Warm Reception
- It's a Small World

# The Center for Complex and Strategic Decisions

## *Possibility of a Singularity*

# The Center for Complex and Strategic Decisions

*The five major recommendations of the Project on National Security Reform significantly improve system performance.*

# The Center for Complex and Strategic Decisions

## *Studying Singapore*

# The Center for Complex and Strategic Decisions

According to Peter Ho in *Ethos*,

- “*Challenge conformist thinking,*”

# The Center for Complex and Strategic Decisions

According to Peter Ho in *Ethos*,

- “*Challenge conformist thinking,*”
- “*Identify emergent risks,*”

# The Center for Complex and Strategic Decisions

According to Peter Ho in *Ethos*,

- “*Challenge conformist thinking,*”
- “*Identify emergent risks,*”
- “*Calibrate strategic thinking processes,*”

# The Center for Complex and Strategic Decisions

According to Peter Ho in *Ethos*,

- “*Challenge conformist thinking,*”
- “*Identify emergent risks,*”
- “*Calibrate strategic thinking processes,*”
- “*Cultivate capabilities, instincts and habits.*”

# The Center for Complex and Strategic Decisions

## Creative Systems Thinking

# The Center for Complex and Strategic Decisions

## ***Vision***

The Center for Complex and Strategic Decisions (CCSD) uses the application of advanced systems approaches to ameliorating complex problems and improving policy and strategy decision making.

## ***Mission***

CCSD provides this capability through the systems-level integration of foresight and strategic leadership models with high-powered complexity science and decision technologies.

# The Center for Complex and Strategic Decisions

*In Partnership with Argonne National Laboratory*

Maneuvering within the complexity of today's world requires strategic thinkers who have the ability to understand non-linear and unintended consequences of their policies and decisions.



# The Center for Complex and Strategic Decisions

## Rigorous Framework

# The Center for Complex and Strategic Decisions

**Foresight** is a key component of CCSD's Approach...



...A ***visionario*** is a scenario developed using a disciplined foresight process that marries the art of story telling and the science of complexity and systems.

# The Center for Complex and Strategic Decisions

## Project Format

# The Center for Complex and Strategic Decisions



# The Center for Complex and Strategic Decisions

The Center context and scope will include:

- Space
- Global
- Regional
- Country
- Domestic
- Cyber-Space

Timelines for Scenarios

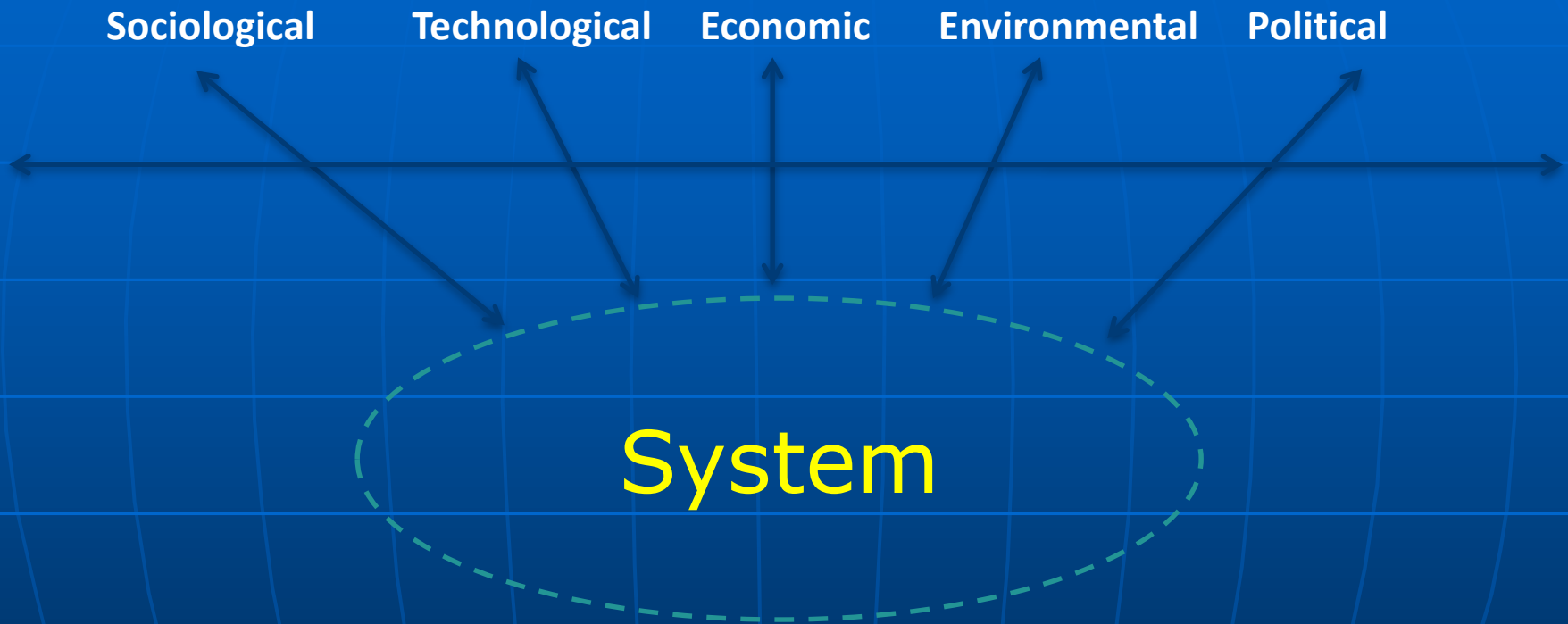
The Globalocalization Spectrum

1 year

50+ years

# System Risk

Across the STEEP Variables



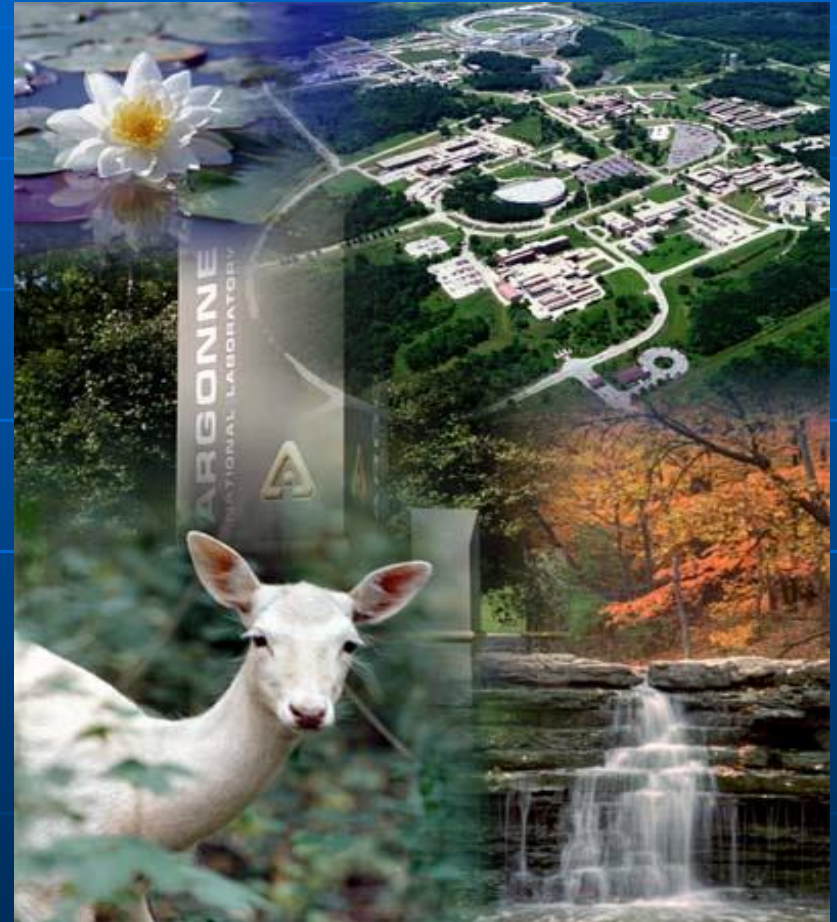
“System Risk” is the aggregation and understanding of the many forms of risk that occur internal and external to the system but which potentially have an impact on the system; the product of the interactions and interdependencies of the various forms of risk, sociological, technological, economic, environmental and political.

# The Center for Complex and Strategic Decisions

## Visioning

# *Argonne National Laboratory*

*Working With:*  
Pamela Sydelko, Director  
Systems Science Center



# Georgia Tech Aerospace Systems Design Laboratory

Dr. Dimitri Mavris

Flight	From	To	Depart	Arrive
4525	ATL	MEM	8:59PM	9:47PM
2354	MEM	PHL	1:05AM	2:48AM
4852	LAX	MEM	8:47PM	9:11PM

# Universidad Rey Juan Carlos Madrid



# Government of Finland



# The Center for Complex and Strategic Decisions

Nahalal, Israel

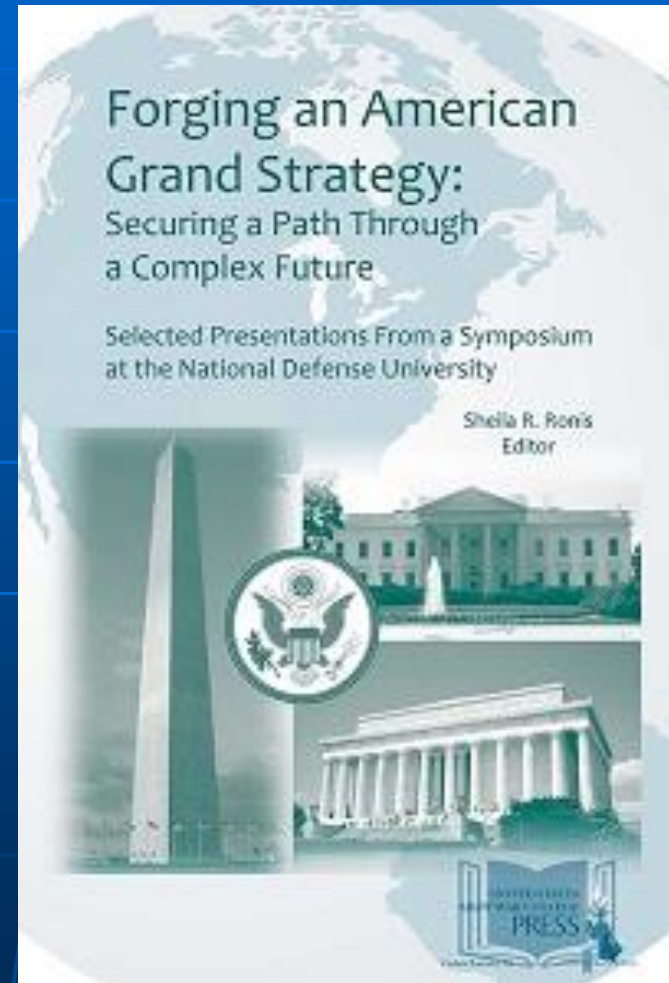


***"Proper management and proper leadership are the secrets  
that enable a country to take-off"***

**Dr. Joseph Shevel, President**

# The Center for Complex and Strategic Decisions

- Chaired by Sheila Ronis, on November 8-9, 2011, the National Defense University held a symposium entitled “Forging an American Grand Strategy: Securing a Path Through a Complex Future,” at Fort Lesley J. McNair in Washington, DC.
- The need for strategic decision support tools and innovative methodologies to develop foresight were discussed, especially at the level of the President of the United States.
- The topics discussed were relevant to the audiences of the Strategic Studies Institute, and the U.S. Army in general, students, faculty, developers of strategy, and policymakers.



# The Center for Complex and Strategic Decisions

- Argonne co-hosted the “Energy Security as a Grand Strategy” Conference, held on May 7-8 2012 at the National Defense University (NDU)
- Other partners:
  - National Defense University
  - University of Chicago
  - Securing America’s Future Energy
- Conference explored:
  - Complex and interdependent nature of energy systems
  - Roles of government, industry, S&T
  - Potential next steps toward creating an Energy Security Grand Strategy
  - Energy Scenario

**Energy Security as a GRAND STRATEGY**

**May 7-8, 2012 - National Defense University – Washington D.C.**

**ENERGY SECURITY IS A WICKED PROBLEM:**

- Difficult to clearly define
- Highly unstable and interdependent
- Socially complex with multiple stakeholders
- Resistant to traditional scientific/rational planning

Join premier strategic thought leaders as they examine energy security as a wicked problem comprised of an interdependent system of systems.

Learn from a distinguished group of panelists as they discuss the key roles of government, industry, and science and technology in addressing energy security issues.

Engage with workshop participants in developing recommendations for solid next steps towards a U.S. Energy Grand Strategy.

**KEYNOTE SPEAKERS**

**Senator Byron Dorgan**  
Senior Policy Advisor, Arent Fox, and former U.S. Senator from North Dakota

**Daniel Poneman**  
Deputy Secretary of Energy

**Steven Koonin**  
Director of the New York University Center for Urban Science and Progress (CUSP), Former Under Secretary for Science, U.S. Department of Energy

**R. James Woolsey**  
Chairman, Foundation for the Defense of Democracies; Venture Partner, Lux Capital Management; Director of Central Intelligence (1993-95)

Argonne NATIONAL LABORATORY

THE UNIVERSITY OF CHICAGO

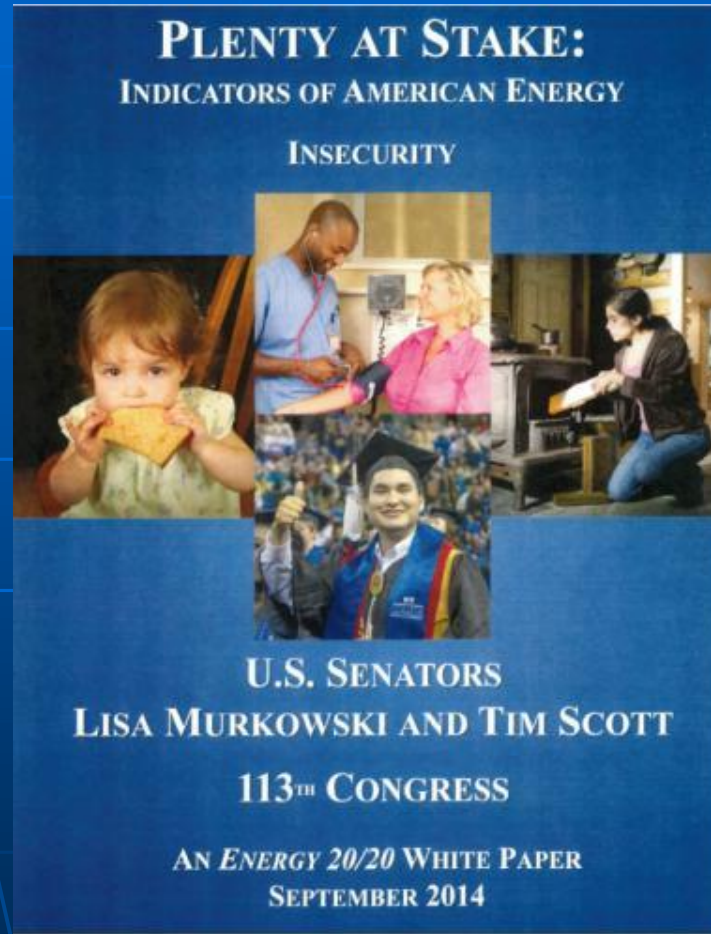
EPIC Energy Policy Institute at Chicago

[http://www.anl.gov/eesa/energy\\_security\\_conference](http://www.anl.gov/eesa/energy_security_conference)

National Defense University | Fort Lesley J. McNair | 300 5th Avenue SW, Marshall Hall | Washington, DC 20319-5066

Presented by: The National Defense University | Argonne National Laboratory | Securing America's Future Energy | Energy Policy Institute at Chicago

# The Center for Complex and Strategic Decisions



# The Center for Complex and Strategic Decisions

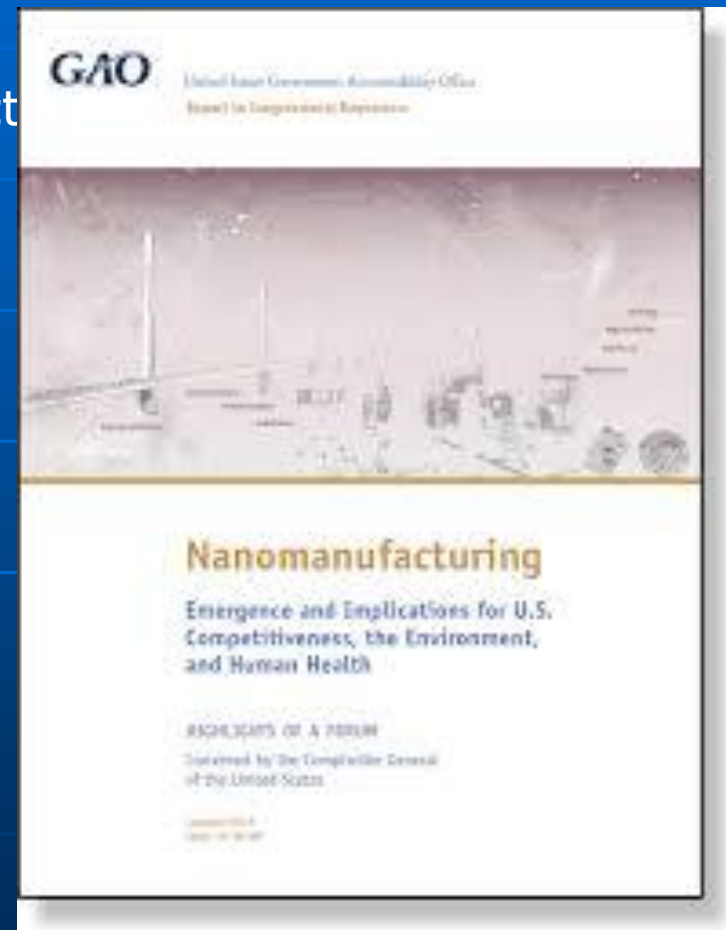
General Accountability Office  
Comptroller Forum on Nanomanufacturing  
in a Global Context

National Academies of Sciences  
GAO Building  
Washington, D.C.

“Nano-technology in 2050:  
A Scenario”

Sheila R. Ronis, Ph.D.

24 July 2013



# The Center for Complex and Strategic Decisions

## **“A Chicago Story”**

Urban Security Project:  
Chicago Roundtable on Counter-violence

Chicago Council On Global Affairs

Visionario By:  
Sheila Ronis, Richard Chasdi and Pam  
Sydelko

19 February 2014



# The Center for Complex and Strategic Decisions

**OECD**

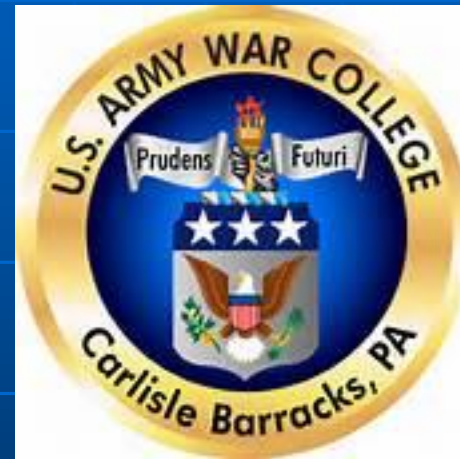
**Paris, France**



# The Center for Complex and Strategic Decisions

**U.S. Army War College  
Strategic Studies Institute  
War Gaming and Simulation Center**

**Carlisle, Pennsylvania**



# The Center for Complex and Strategic Decisions

## **Foresight Initiative**

National Geo-spatial Intelligence Agency



# The Center for Complex and Strategic Decisions

School of International Futures,  
Cat Tully, UK



# The Center for Complex and Strategic Decisions

**Professor Leon Fuerth**  
**George Washington University**  
**Former National Security Advisor,**  
**Vice President Al Gore**



# The Center for Complex and Strategic Decisions

In Discussion:

- Commercial/Economic
  - Disintegration of the US industrial base
  - Currency manipulation by China
  - Debt reduction strategies
- Diplomatic
  - Humanitarian Relief
  - Engagement of the Islamic World
- Defense
  - Afghanistan
  - North Korea and Iran
  - WMD mitigation strategies



# The Center for Complex and Strategic Decisions

## Shaping the Future

# The Center for Complex and Strategic Decisions

Thank you!

<http://ccsd.walshcollege.edu>

[sheilarr@aol.com](mailto:sheilarr@aol.com)

[sronis@walshcollege.edu](mailto:sronis@walshcollege.edu)

[sronis@anl.gov](mailto:sronis@anl.gov)