

Risk & Resilience

*Cultivating a resilient world-class university that
is future-ready, risk aware, and not risk-averse*

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Disaster Resilient Universities (DRU) Network®



Why Resilience?

We live in a VUCA world!

V OLATILE	The environment demands you react quickly to ongoing changes that are unpredictable and out of your control
U NCERTAIN	The environment requires you to take action without certainty
C OMPLEX	The environment is dynamic, with many interdependencies
A MBIGUOUS	The environment is unfamiliar outside of your experience

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Concept of Resilience

Cycle of adaptive change

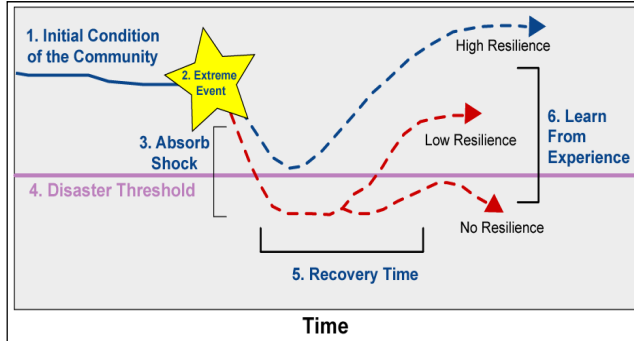
Source: Holling, 1987 (willdrake.wordpress.com)

Originally conceived as a way to think about ecosystems and the dynamic processes that occur within a system.

Adaptive Change!

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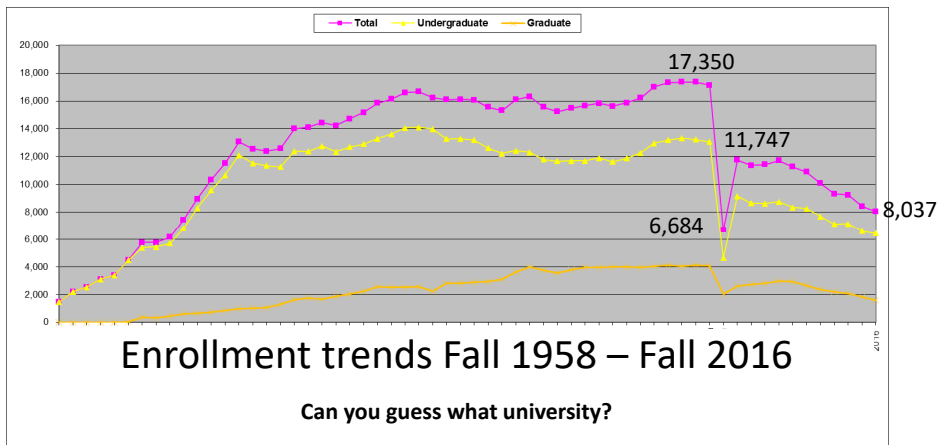
Graphing Resilience



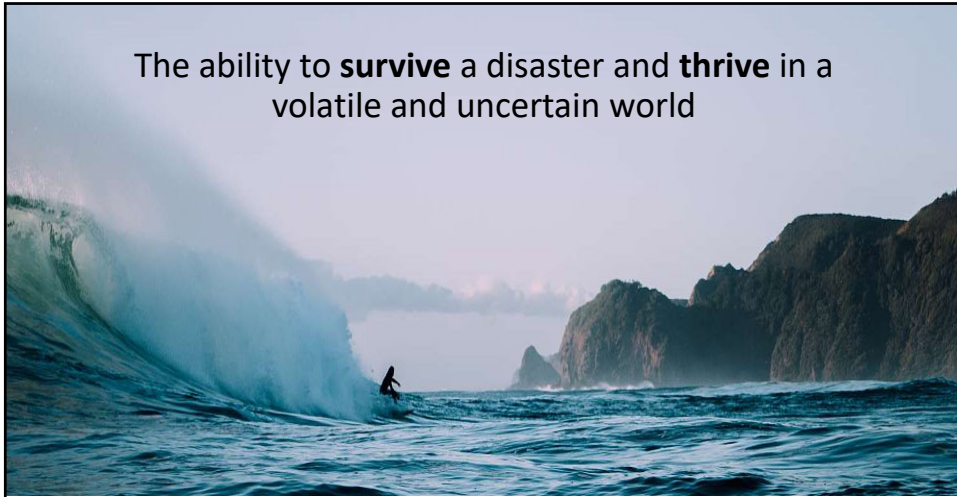
Source: USGS- University of Oregon Research Collaboration, 2006)

- 1. Initial condition
- 2. Extreme event
- 3. System shock
- 4. Disaster threshold
- 5. Recovery time
- 6. Lessons learned

A university example of impact



The ability to **survive** a disaster and **thrive** in a volatile and uncertain world



Resilient
ORGANISATIONS 

www.resorgs.org.nz

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Resilience Organized!

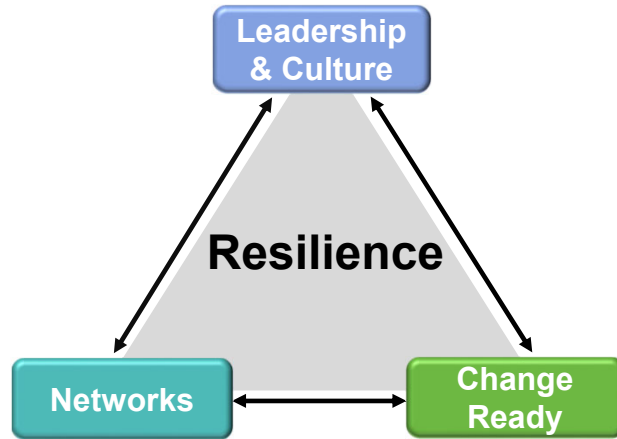
3	Attributes
13	Indicators
3	Cultures

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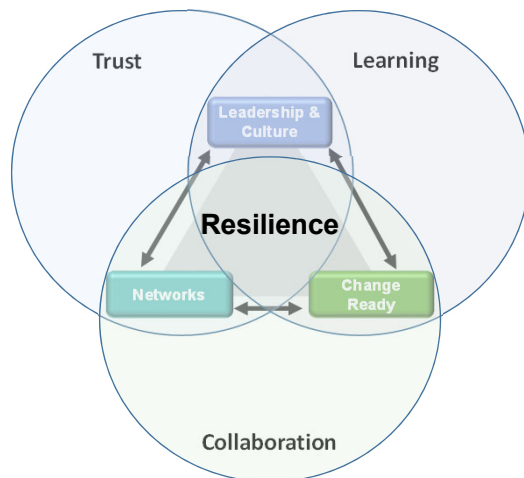
Attributes of Resilience



Indicators of Resilience



Cultures of Resilience



STRENGTHENING THE DISASTER RESILIENCE OF THE ACADEMIC BIOMEDICAL RESEARCH COMMUNITY PROTECTING THE NATION'S INVESTMENT



Lisa Brown, Study Director

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The National Academies of SCIENCES
ENGINEERING
MEDICINE





The report offers recommendations that, if implemented, would help the academic biomedical research community protect:

- human life
- research animals
- property and environment, and
- maintain the integrity and continuity of the research.



Consensus Study Committee Charge

- Describe the extent of the impact of prior disasters on the academic research community (i.e., biological and biomedical)
- Provide guidance for individual researchers, research institutions, and sponsors regarding potential actions to mitigate the impact of future disasters



Vital to the Nation

The Imperative

- Hub of **employment, economic productivity, and scientific progress** and provides essential services that underpin American society, especially concerning how to address emerging public health issues
- Federal and other research sponsors invest **about \$27 billion** annually in life sciences research at academic research institutions

The Urgency

- Consequences of recent disasters have shown that the investments in research are not uniformly secure
- Protection of research as a critical national resource and an economic driver has been less of a priority than promoting the research itself



Impacts of Prior Disasters

Research faculty, staff, and students

- Impacts on safety and well-being of humans, personal and psychological impacts, loss of employment, career impacts

Academic research institutions

- Damage to research facilities, impacts on research animals, damage to data, samples, reagents, and equipment, impacts to utilities, critical infrastructure, and IT, interruptions to supply chains and critical services, loss of human capital, monetary costs, legal implications

Research sponsors

- Redirection of research, administrative burden, financial burden

Communities, states, and the nation

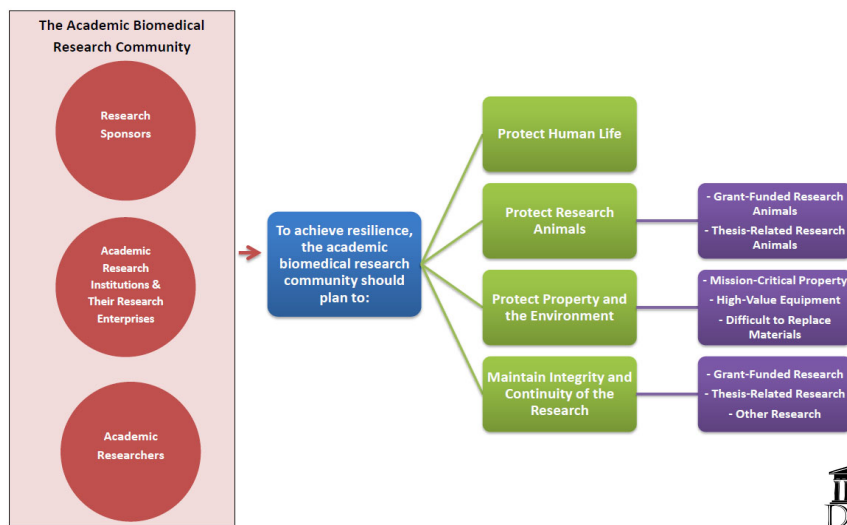
- Impacts on employment, economic productivity, and biomedical progress, interruption to health services, education, and research capacity

The science

- Delayed or arrested discoveries are a likely consequence



The Vision: Protect the Nation's Biomedical Research Investment



For more information

Free PDF of the report is available at:
www.nationalacademies.org/DisasterResilientLabs

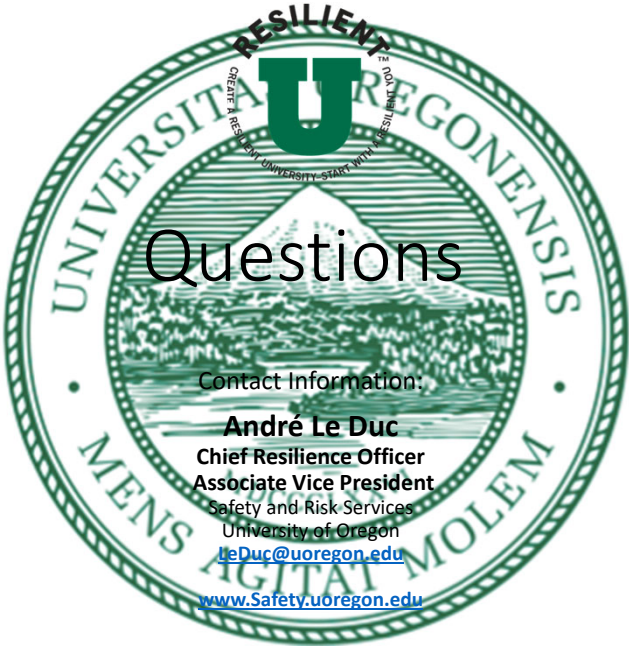
Summary materials available online:

- 4-page Report Brief
- Recommendation List
- Slide set

For more information about the study,
please contact:

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RESILIENT
CREATE A RESILIENT UNIVERSITY - START WITH RESILIENT

Questions

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