



Universities Role as Conveners of a Resilient Future

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Today We are Navigating a World of Disconnected Driving Forces

Across geographies

Among stakeholders

Within stakeholder groups

Across time aspects

Across disciplines

Across diverse human needs and preferences

Seeing “the whole” can be achieved by ethos and proactive leadership that challenges silos, and open new avenues for exploration at the intersections of disciplines, across organizational boundaries, and in the unexplored parts of the system of nature.

Leadership that enables mindset shift and transformative change needs to be flexible, inclusive, and responsive to change.



*“The whole is greater
than the sum of its parts”*

Αριστοτέλης
384–322 BC



Key Characteristics that Universities Should Embody in Society

- **Curiosity** drives basic science
- **Verified knowledge** should be open and globally accessible
- Providing **incentives for interdisciplinarity** to address complex challenges
- Spreading knowledge that **change mindset** (digital, AI, quantum, material aso)
- Teaching the **practice of trust-building** in collaborations and partnerships
- Serving as **neutral convener** of stakeholder partnerships
- Providing **leadership and leadership training**
- Providing **incubators** for the innovation ecosystem and communities' transformation
- Fostering the mindset necessary for **sustainable impact**
- Enhance knowledge creation by **Open Science** in operation, publishing, and scientific data repositories

Universities Extended Role and Governance in Research

Researcher	Traditional Role		Added Role - Catalytic governance		Added Role - Convening partnerships	
	Salary and support	Driven by	Salary and support	Driven by	Salary and support	Driven by
Postdoc	Base & Grant	Individual career	by Assist, Assoc, Full Prof.	Curiosity Team	Partnership	Impact Team
Research Prof	Base & Grant	Research interest	by Assist, Assoc, Full Prof.	Curiosity Team	Partnership	Impact Team
Assistant Prof.	Base & Grant	Granted research	Incentive program	Leading a Curiosity Team	Partner support & Grant	Impact of research
Associate Prof.	Base & Grant	Granted research	Incentive program	Leading a Curiosity Team	Partner support & Grant	Impact of research
Full Professor	Base & Grant	Granted research	Incentive program	Leading a Curiosity Team	Partner support & Grant	Impact of research
Guest Prof.	Base & Grant	Collaboration	Assist, Assoc, Full Prof.	Curiosity Team & Network	Partner support & Grant	Impact & Network
Named Prof.	Base & Grant	Grants & Special	Incentive progr. & Partner	Lead Curiosity Cluster	Partner support & Grant	Attraction & Impact



The role should stay and evaluated as present



Slow internal buildup of incentives for Free Curiosity Driven Research, with external input on criteria and outcome evaluation



Inviting to Public-Private-University Partnerships on areas of local strength with University as Convener, funded by partners and grants

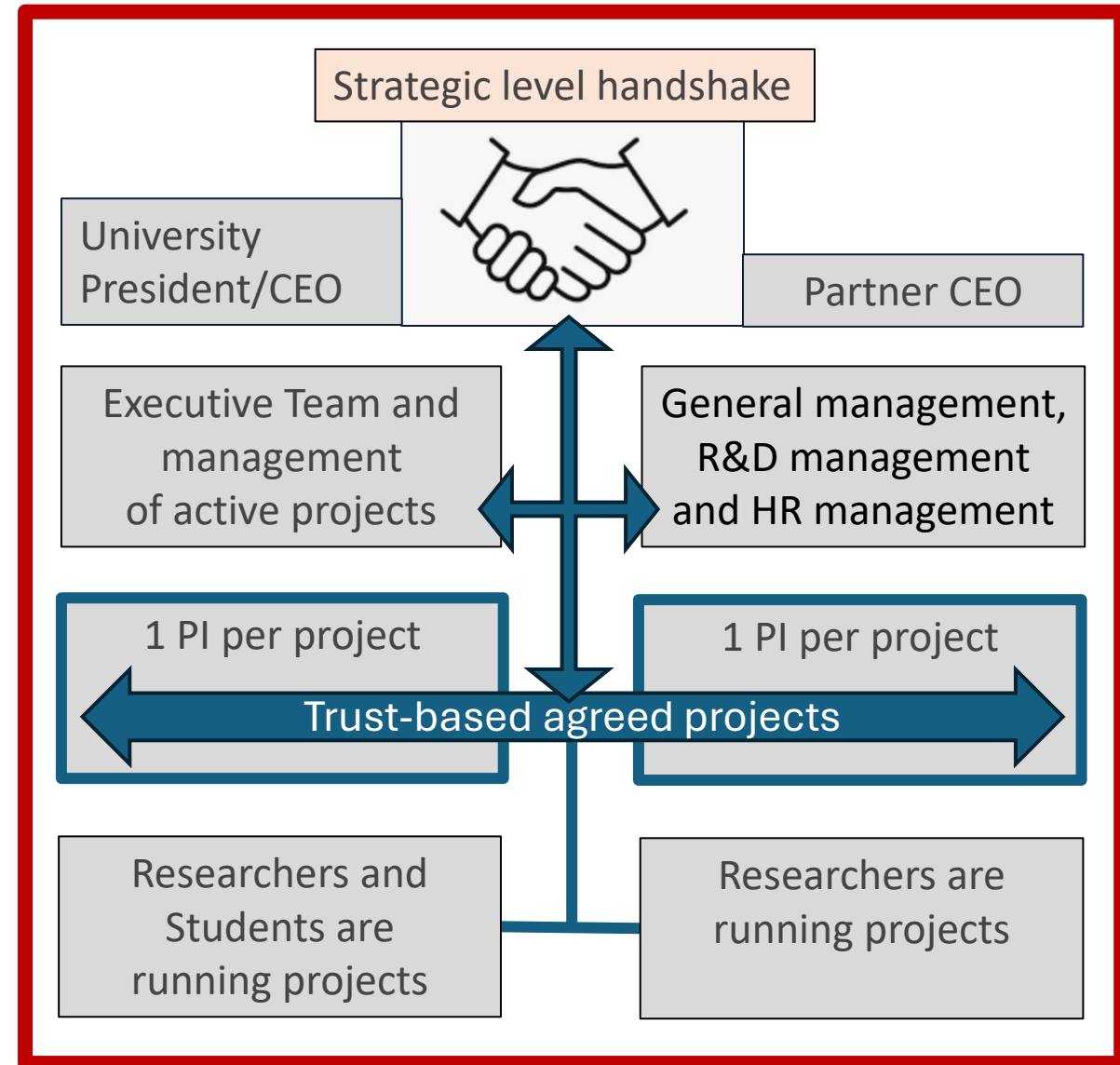


Powerful “Multi-Level Collaboration” with Trust-Based Industry-Academia Partnerships for Win-Win Transformation

- **Multi-level engagement between people:**
CEO handshake, PI to PI project drive, and 360° support
- **Framework agreement with additive projects**
 - Collaborative pre-competitive research (base)

Projects develop to also include:

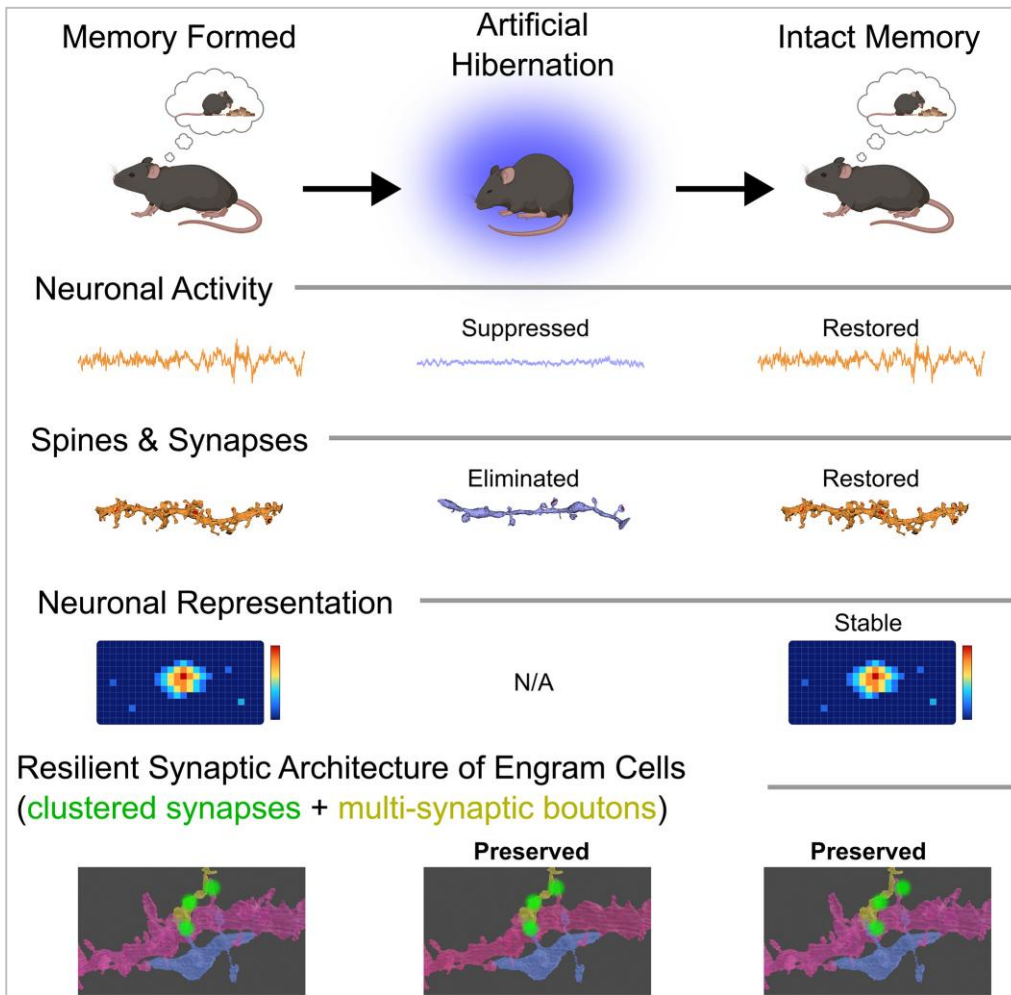
 - Sponsored research or researchers
 - Talent and Leadership development
 - Joint Labs, Testbeds, Living labs
 - Equipment, Core facilities, and/or Buildings
 - Spinning in/out startup companies
 - New Standards at higher knowledge-level
 - Inspirational trustbuilding joint activities
 - Competitive Agreements (with separate contract)
- **A high-level steering committee**
meetings every six months for review & development
- **Monthly team meetings**
with contribution by the company’s R&D staff
- **Trust-based collaboration**
based on mutual understanding of culture and priorities





Artificial hibernation reveals secrets of long-term memory

Y. J. Lin, ... Kaz Tanaka, Artificial hibernation reveals synaptic engram architecture associated with memory retention. **Science** **393**, 7004 (2026).



Previously, synaptic strengthening was thought to be key to memory recall, and that stronger synapses with larger dendritic spines were fundamental to long-term memory retention.

In search of the physical substrates of memory storage:

- Artificial hibernation deployed as a tool to reduce nearly 80% of brain activities and eliminated close to half of synapses in hippocampus, the brain region which retains the memory trace of place (“engram”).
- Multi-scale imaging (~1 nm to 1 mm) of synapses and multi-synaptic boutons by using correlated light and electron microscopy (CLEM)
- But memory recall for physical space navigation was not impaired and mostly restored after artificial hibernation.
- **It's the architecture of small engram-engram clusters of synapses that matter for memory storage and are preserved long-term.**

About OIST Authors: Two of the four co-first authors with equal contributions Yuju Lin (postdoc) and Ai Takahashi (technician) plus 2 other authors and the corresponding author are from **Assistant Professor Kazuma Tanaka's** lab. Key Collaborators are from Tokyo University of Science, Tsukuba University, Scripps, and the National Institutes of Natural Sciences (Japan).

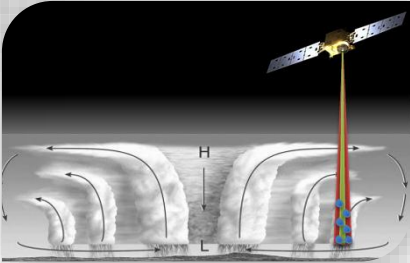
Read more: DOI:[10.1126/science.aee7004](https://doi.org/10.1126/science.aee7004)

<https://www.oist.jp/news-center/news/2026/8/13/artificial-hibernation-reveals-secrets-long-term-memory>



Moving Beyond Interdisciplinary Boundaries

Fight Heat with Heat — Active Control of Tropical Cyclones



PROJECT CONCEPT: Tropical cyclones are heat engines powered by warm seas: moisture evaporates, condenses, and releases latent heat that drives the storm. This project tests whether precisely timed, localized thermal interventions, “fighting heat with heat”, can disrupt those feedbacks. By targeting moisture supply and heat-release pathways, we aim to measurably reduce intensity or redirect tracks.

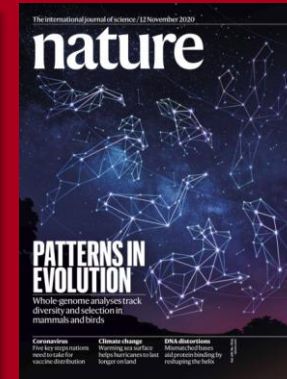
GOAL: Develop and validate a science-based framework for active typhoon control: testable hypotheses, high-fidelity simulations, lab analogs, and ethical risk protocols that assess when, where, & how modest thermal perturbations could safely weaken storms.

SAFEGUARDS: Model-first, lab-verified, and tightly governed; prioritize safety, reversibility, equity, and transparent risk management.

Prof.
Keshav
DANI



Prof. Pinaki
CHAKRABORTY





Control of Tropical Cyclones attracted related areas and partners

Blue Economy - Protecting Life and Livelihood from Typhoons

Simultaneous ocean and air monitoring

Okinawa Institute of Science and Technology

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NTT and OIST make first simultaneous atmospheric and marine observations directly beneath Cat 5 typhoon in NW Pacific

Observation data taken from directly beneath typhoons may improve the accuracy of typhoon predictions, and explains the interaction between the atmosphere and ocean.



JOINT PRESS RELEASE

NTT R&D Space Environment and Energy Labs

wave glider and underwater ROV



Typhoon underwater camera IHL



Meteorological Research Institute
Japan Meteorological Agency

Predictive typhoon risk modeling



RESEARCH UPDATE

Scientists expose the cold heart of landfalling hurricanes

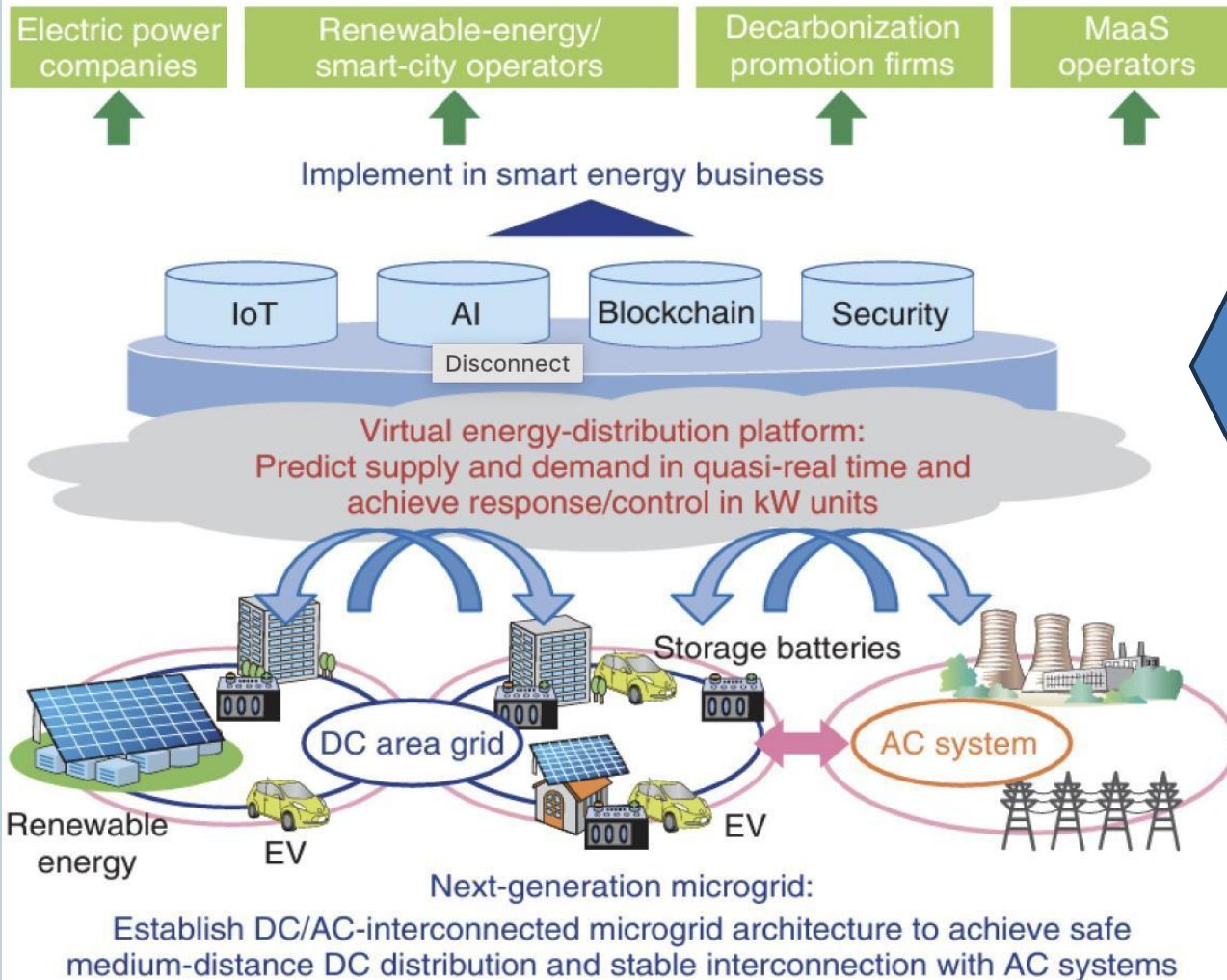
Using simulations, researchers uncover a key clue as to whether hurricanes will decay or re-intensify after hitting land.

Typhoon impact on seaweed farms & CO₂ removal



Energy Research on Okinawa Island

Public-Private-University Partnership – TESTBED Resilient Energy Solution for Subtropical Islands



Multi-disciplinary research cluster ENERGY OPEN CENTER



Resilient Response
to aChanging
Environment



Transforming Transport
in the Islands



ExoticEnergyin the
Subtropics



Formulating an Energy
Efficient Future

Leadership Profiles

Systemcreative

Favorable
for impact
of organization

Great leadership today
is not just about
driving performance or
developing people! It's
also about shaping the
system where both
happen.

Individual development

Developmental

Conventional

+ Demand and reward
Strive for agreements

+ Control
Take proper action

— Demand and reward
Carrot and stick

— Control
Over-control

Group development

Model, authentic
Valueground, example and responsibility
Personal consideration
Give support and confront
Inspiration and motivation
Encourage participation

Developmental leadership builds
intrinsic motivation of
the individual and gives
the organization a
favorable development.

System thinking
Mindset shift, sustainable solution
Lifelong learning
Update mental models and knowledge creation
Team solutions, empathy-led approach
Foster teams, interdisciplinary knowledge

Systemcreative leadership
builds rethinking to provide value
with a conscious eye towards
improvement, acting as catalyst in
a proactive approach, and unite
people over silos in society to
enable change to create, reorder
and provide impactful systems for
a greater good.

Organizational impact

Favorable
for role of
organization
in society

Destructive

Passive
Let-go, weak,
unsure, unclear

Active
Arrogant, unfair,
threat,
overexpectations
ego-centric, false

Alumni Creating Mindset Shift in Traditional Industry

The EINRIDE story

Next Generation

Self-driving technology as well as remote operation of multiple vehicles and remotely control the vehicle in difficult traffic situations. The Truck can travel 200 km (124 miles) on a fully charged battery.



Partnership with delivery system

A food company saved 460 tones of CO₂ since 2017 in Sweden, and bumped delivery precision up to 99.4%. With 12,000 stores across 31 countries, they see sustainability as a key point across its supply chain.

Software EV solution became step one

- An intelligent shipping platform to plan, and track sustainable transport
- Silent deliveries and cut their freight emissions by up to 95%.



How it Started

Alumni from universities in Sweden working in forefront MNC (Trucks, E-cars, Telecom, Game industry...) joined in **Open Innovation discussions** based on trust. They started Einride AB.



The Future Agenda for University Leaders in the Coming Years

- **Unite universities globally** and articulate their shared mission and contribution as a stakeholder in society.
- **Respect local identity** and support each university to develop its distinctive strengths for regional impact.
- **Create open meeting places** for cross-university networking and interdisciplinary exchange across universities and their respective areas of focus.
- **Strengthen the role of universities in convening trusted spaces for dialogue**, bringing verified scientific knowledge into discussion, decision-making, and action.
- **Develop leadership capabilities** among students, researchers, and professional staff to navigate complexity, foster collaboration, and drive transformative change.
- **Scale open science and its impacts** through enabling more researchers to pursue curiosity-driven research and convening cross-sector partnerships to expand the reach and impact of scientific knowledge.



Thank you!