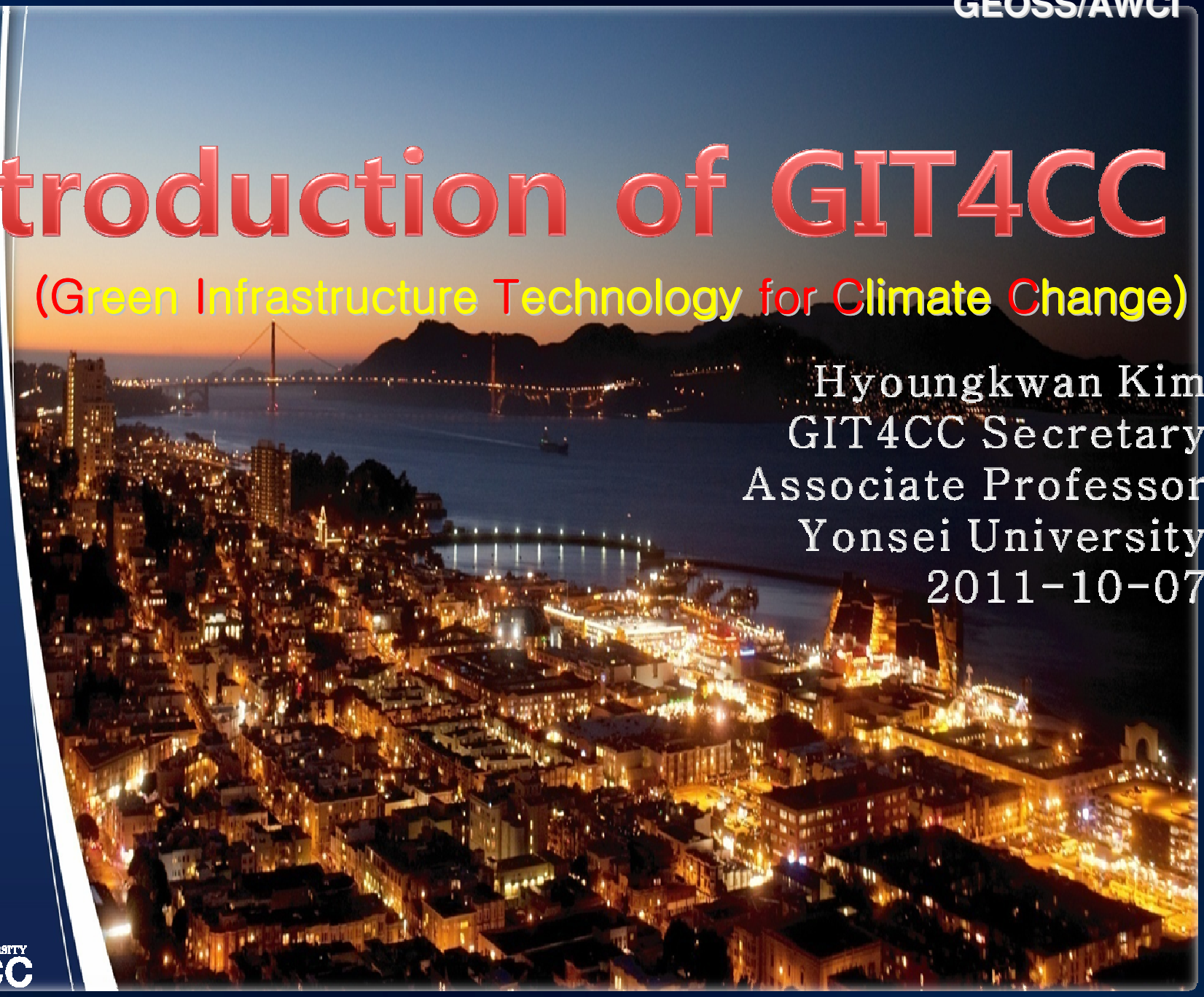
Introduction of GIT4CC

(Green Infrastructure Technology for Climate Change)



Hyoungkwan Kim
GIT4CC Secretary
Associate Professor
Yonsei University
2011-10-07

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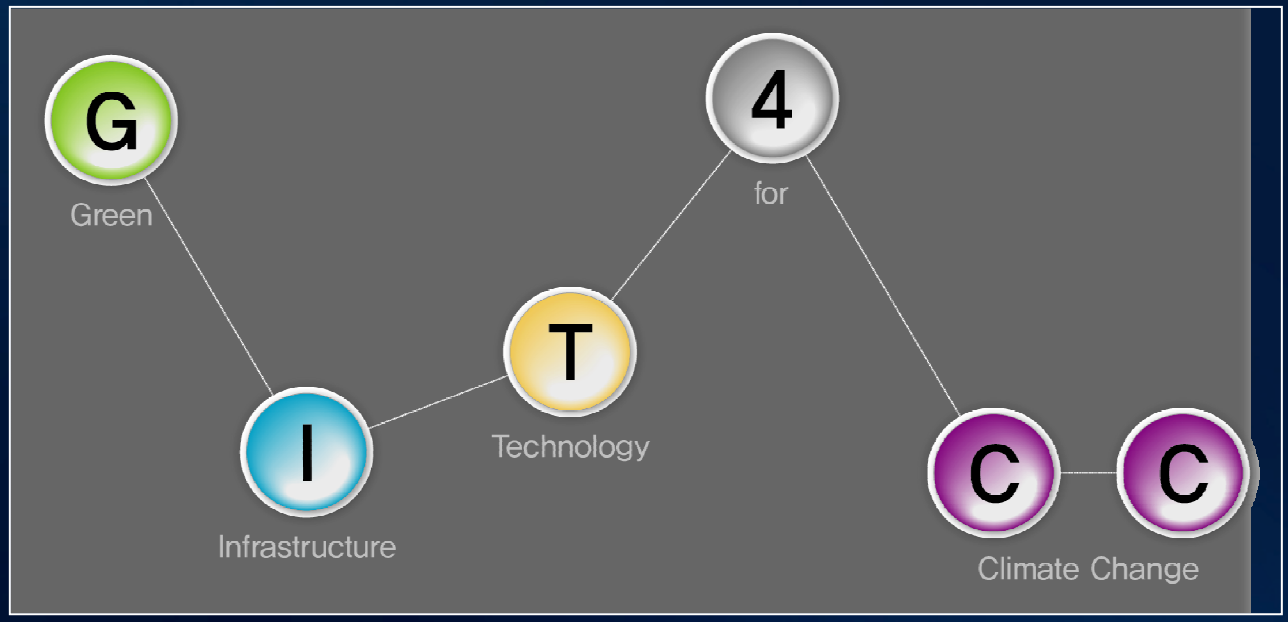
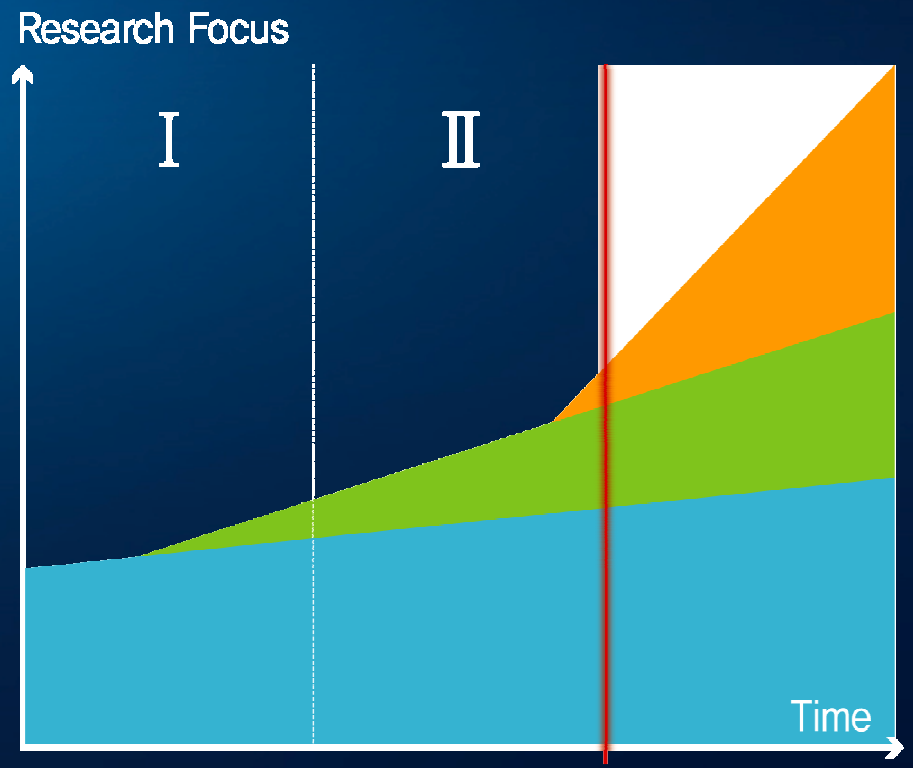
GIT4CC

The Green Infrastructure Technology for Climate Change (GIT4CC) center aims to develop civil infrastructure adaptation technologies based on mid- and long-term predictions of climate changes.



Research Trends



(PEER, 2009)

Adaptation Research

Considering climate change as reality, adaptation technologies are pursued

Mitigation Research

CO2 reduction, etc.

Climate System Research

Climate change estimation, etc.

Research Objectives

Adaptation technology development for civil infrastructure

Area 1

Proactive optimization of adaptation technologies

- Climate and hydrological scenario creation
- Optimization of proactive adaptation strategies

Area 2

Civil infrastructure adaptation technologies

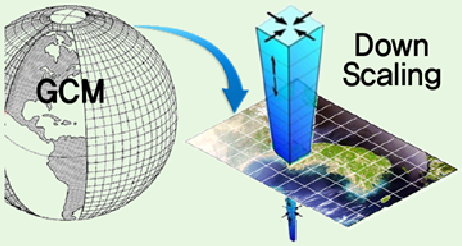
- Adaptive geotechnical design
- Multi-climate concrete
- Porous pavement technology for improved water cycling

Area 3

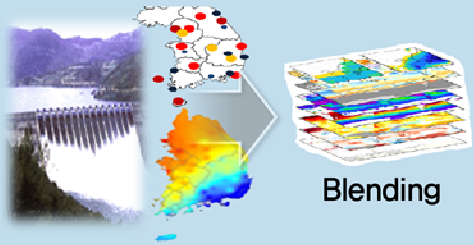
Unconventional water resource and environmental technology

- Urban hydro-ecology improvement
- Coastal management technologies for sea level rise

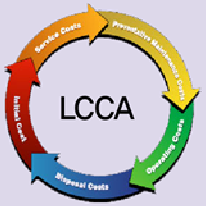
Area I

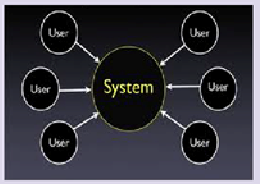


- Climate scenario for Korea
- Hydrological model for infra design



- Integration of climate model and measured data
- Standardized design parameters





Expert system

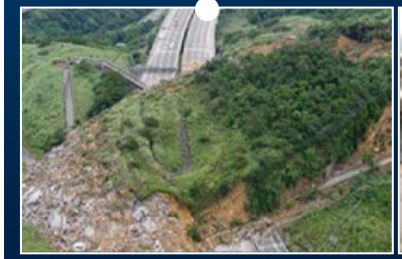
- Probabilistic LCC evaluation
- Adaptation strategies

Infrastructure Adaptation Framework

Area II

Adaptation technologies

for the weakest fields of infrastructure
in climate change

Disaster prediction for natural slopes	Adaptive geotechnical design	Concrete for extreme weather	Slimming technology	Porous pavement technology
				

Core Adaptation Technologies

Area III

Urban hydro-ecology improvement

- Bio-swale
- Bio-barrier

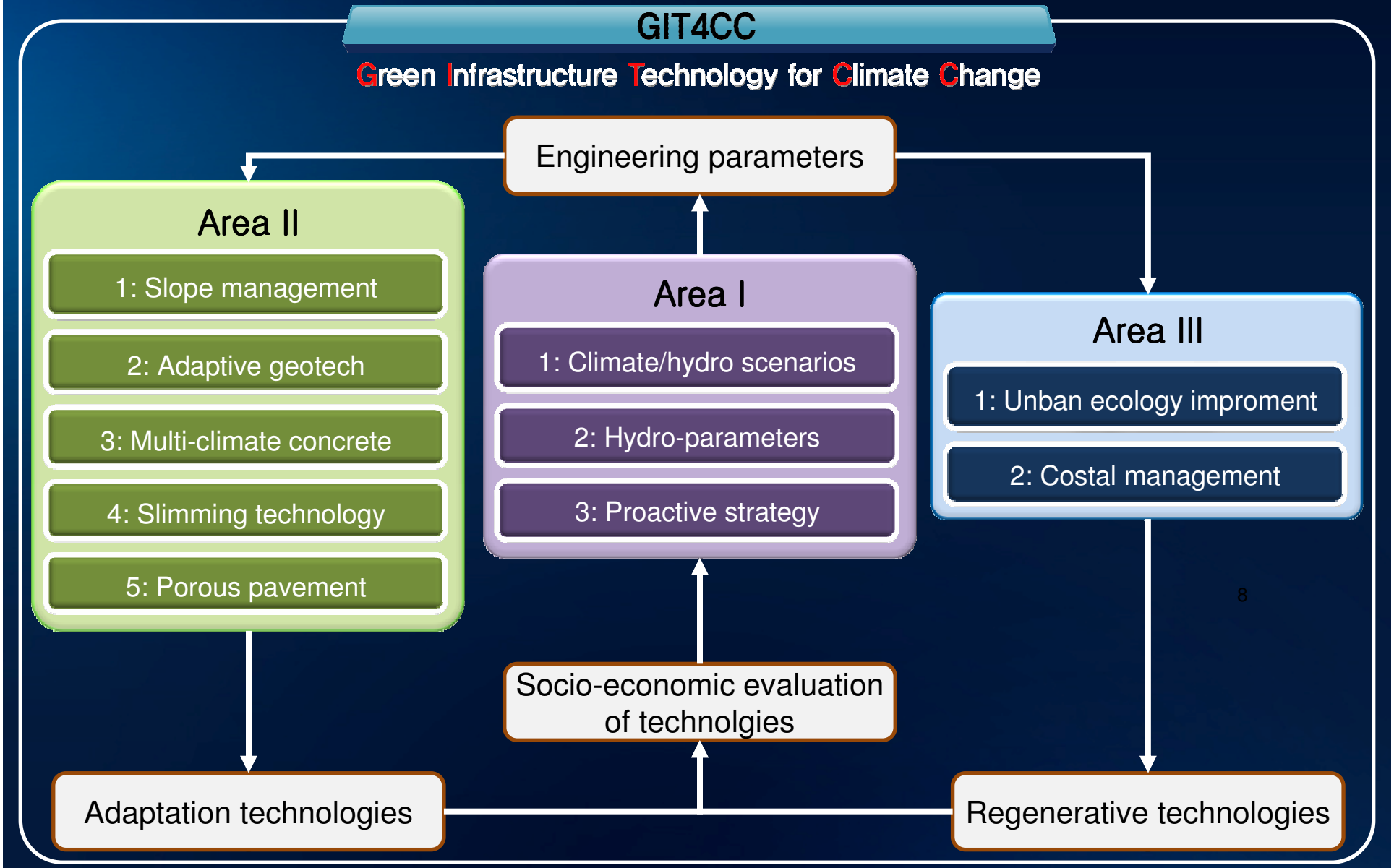
Costal management for sea level rise

- Costal erosion prediction
- Submerged structure for prevention of the erosion

Flow-through planter test in New Zealand

Regenerative water resource and environmental technologies

Interrelationships among the Areas



Director

Name

Jeong, Sangseom

Education

- 1979. 03 ~ 1983. 02 Yonsei University, BS
- 1986. 09 ~ 1988. 12 University of California, Davis. MS
- 1989. 01 ~ 1992. 08 Texas A&M Univ, PhD

Research interest

- Foundations for high-rise structures
- Slope stability
- Earthquake-resistant independent footing
- Tunnel analyses
- Large-scale pile design under lateral load

Researchers

Area I


Bae, dukhyo
(Sejong Univ.)


Kim, Kwangseop
(Kyungbook Univ.)


Kim, Hyoungkwan
(Yonsei Univ.)


Lee, Junwhan
(Yonsei Univ.)


Kim, Jay Jangho
(Yonsei Univ.)


Kim, Seunguk
(Sejong Univ.)


Moon, Seongho
(Seoul Science
and Tech. Univ.)

Area II

Area III


Kang, Hojeong
(Yonsei Univ.)


Lee, Jongin
(Joennam Univ.)

Research Contributions

Infrastructure Adaptation for Climate Change

As Is

- General climate change scenarios
- Reactive approach
- Scattered strategies

To Be

- Climate change scenarios for infrastructure
- Proactive approach
- Integrated strategies

11

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Thank you