

Seoul National University

# Smart City Global Convergence

2020.08.25

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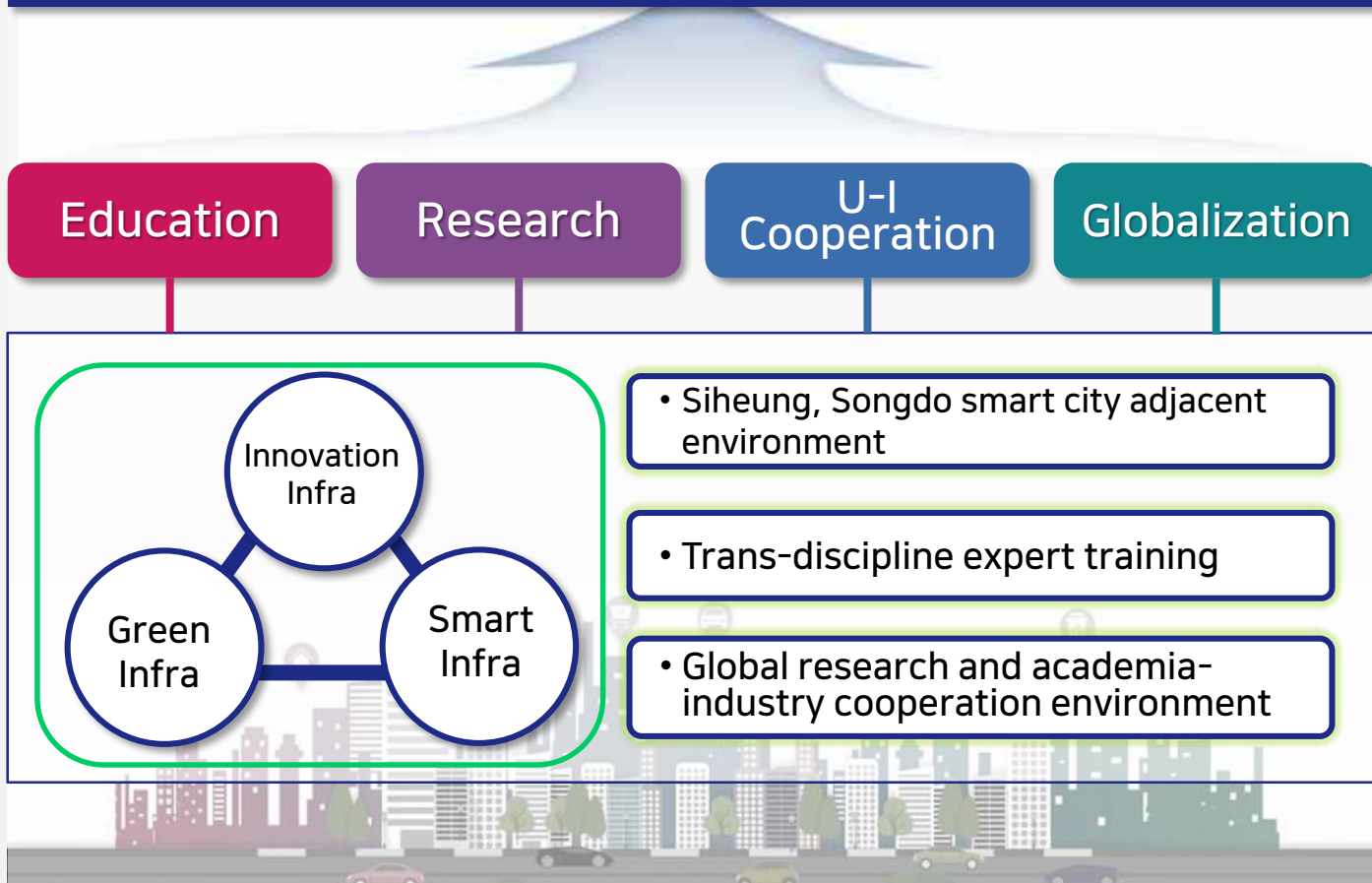
# Introduction

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**SNU Smart City Global Convergence**

## Purpose of establishment

### SNU Smart City Supreme School (Supreme-S)



## Purpose of establishment

Structured discipline and frame  
for global innovation and academic convergence

### Past

- Scattered technologies
- Weak ecosystem
- Unidisciplinary
- Top-down approach
- W/O Business model

### Future City

### Future

- Converged technologies
- Strong ecosystem
- Transdisciplinary
- Bottom-up approach
- With Business model

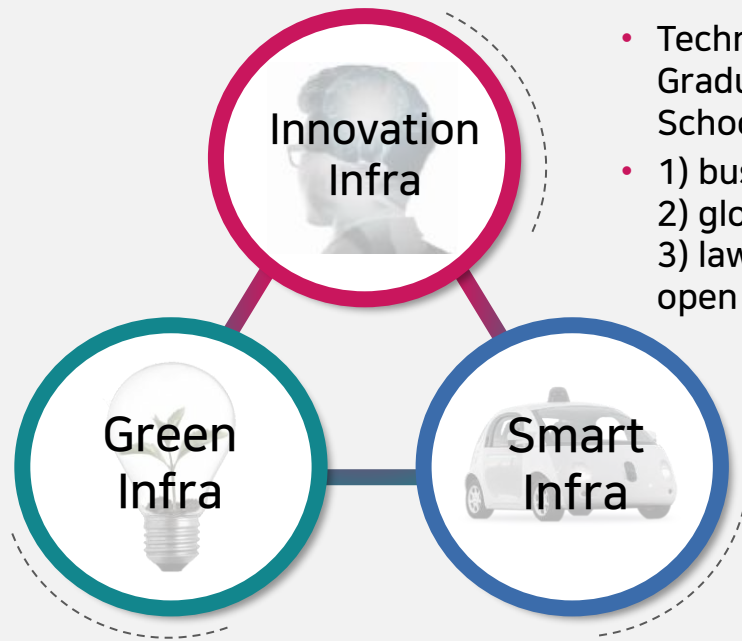
Trans-  
disciplinary  
education

### Past City

Individual technology-oriented,  
Lack of self-sustaining ecosystem



## Participatory department



- Technology Management Economics and Policy, Graduate School of International Studies, School of Law
- 1) business/industry changes,  
2) global policy changes,  
3) law/regulation changes based on smart city open innovation

- Graduate School of Environmental Studies, Department of Landscape Architecture and Rural System Engineering
- Smart city planning-modeling-economic evaluation

- Graduate School of Environmental Studies
- Development of core technology for smart city demand

# Vision and Goal

## AS IS (Benchmark global model)

### Education • Research

#### UC Berkeley iSchool

#### Pittsburgh University SCI

- Transdisciplinary smart city education and research
- Element technology focused
- Theory-oriented curriculum

### Academia- industry Cooperation

#### Carnegie Mellon Metro 21

#### Cambridge Smart Infra & Const

- Regional project-based smart city convergence research
- Urban design, engineering-based academia-industry cooperation

### Globalization

#### Singapore – MIT (SMART)

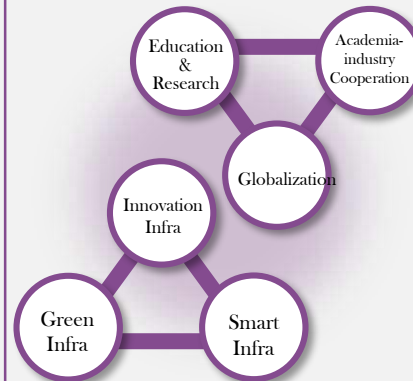
#### Stanford University (SCIGC)

- International joint research
- Sharing and exchange of human and material resources
- Cooperation with global companies and high-tech industries

## TO BE (SNU Smart City Global Convergence)

### SNU Smart City Global Convergence

#### 3 on 3 system



- Transdisciplinary smart city edu
  - Engineering, management, economy, law, policy, and humanities
- Global open platform
  - Building global network of smart city experts
- On-site training education
  - Songdo smart city, Siheung smart city and so on

- Smart city global convergence education
  - English based curriculum
  - ‘Convergence core class’ and ‘Convergence methodology class’
- Demand based curriculum
  - Project based(5 practical, 5 problem-solving)
- Regional research and cooperation
  - Smart city demonstration business
- Supreme research quality
  - Diversification of research fields(SCIE, SSCI, A&HCI)
  - More than 10% of papers on the top Q1 journal
  - Global multidisciplinary academia-industry research
- Global alliance
  - Global alliance-based internationalization activities
  - 10 universities from 5 continents
  - Global dual degree and training
  - Smart city education and business model export
  - Online or offline education and conference

Training and gaining brain  
for global innovation  
(SNU Smart City Supreme School)

# Professors

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**SNU Smart City Global Convergence**



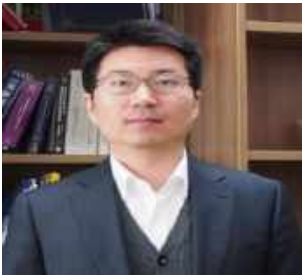
# Smart Infra Professors



Technology Management, Economics and Policy Program

Jun Seok Hwang

'Future prospects of the convergence engineering field including Smart cities and development of innovation strategies'



Technology Management, Economics and Policy Program

Yoonmo Koo

'Energy & Environment Policy'



Graduate School of Engineering Practice

Seungwoo Seo

'Intelligent car, Vehicle communication, Communication and network security'



Graduate School of Engineering Practice

Seongsoo Hong

'System software, Operating system, Embedded system, Real-time system'



Technology Management, Economics and Policy Program

Jorn Altmann

'Economics of Internet Services, Smart system analysis and social network research'



Graduate School of Engineering Practice

Seongwoo Kim

'Self-driving car, Robot AI, Digital manufacturing'



Graduate School of Engineering Practice

Eunsuk Suh

'System Engineering, Product and Platform Architecture Design, System Cost Analysis'

# Innovation Infra Professors



Technology Management, Economics  
and Policy Program

Jina Kang

'Strategic Management,  
Entrepreneurship and start-  
up'



Technology Management, Economics  
and Policy Program

Jeong Dong Lee

'Technology-based new industry  
innovation policy theory and urban  
development case study in Smart  
city'



International Department

Hyeok Jeong

'Smart City Regional  
International Development,  
Economic growth/ development economy'



Technology Management, Economics  
and Policy Program

Yeonbae Kim

'Resource and Energy Economics,  
Technology commercialization'



Technology Management, Economics  
and Policy Program

Jong Su Lee

'Technology and energy demand  
forecast, Smart city technology  
commercialization valuation and  
innovation growth potential  
analysis'



School of Law

Wonwoo Lee

'Smart City Administrative  
Law System'

# Green Infra Professors



Department of Landscape Architecture  
and Rural System Engineering

Youngryel Ryu

'Land-atmosphere interactions,  
Exponential technologies, Urban  
ecology'



Department of Landscape Architecture  
and Rural System Engineering

Junsuk Kang

'Smart Landscape Systems Development,  
Analysis, design, and optimization of  
Landscape Structures'



Department of Landscape Architecture  
and Rural System Engineering

Dongkun Lee

'Climate change,  
Environment impact assessment,  
Environmental restoration'



Graduate School of Environmental  
Studies, Landscape Architecture

Saecheon Kim

'Resource and Energy Economics'



Graduate School of Environmental  
Studies, Landscape Architecture

Jaeseung Lee

'Urban design, traffic behavior,  
GIS'



Graduate School of Environmental  
Studies, Landscape Architecture

Youngkeun Song

'Landscape ecological planning,  
environmental remote exploration,  
geographic information  
system(RS·GIS)'



Department of Landscape Architecture  
and Rural System Engineering

Heeyeun Yoon

'Landscape planning  
Smart care and welfare'

# Cooperative Professors



Department of Computer Science and Engineering

Bongki Moon

'Database'



Department of Architecture

Myoungsouk Yeo

'Architectural environment and facilities'



Civil and Environmental Engineering

Youngsang Kwon

'Urban Design'



Civil and Environmental Engineering

Junho Song

'Structural Engineering'



Civil and Environmental Engineering

Jinhwan Hwang

'Hydraulic Engineering'



Civil and Environmental Engineering

Kiyun Yu

'Spatial Information Engineering'



Civil and Environmental Engineering

Dongkyu Kim

'Traffic Engineering'

# Programs

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**SNU Smart City Global Convergence**

## Education process

- Total Credits: Master's program 24 credits or more,  
Doctoral program 36 credits or more,  
Master's and doctoral integrated program 60 or more credits
- Requirements for graduation are based on its each department (department) rule .  
At least one-quarter of the credits should be the courses enlisted as required major or elective major courses of smart city global convergence major

		Degree
College of Engineering	Dept, of Civil & Environmental Engineering	Master of Science, Ph.D.
	Technology, Management, Economics and Policy Program	Master of Science, Ph.D.
School of Law	School of Law	Master of Law, Ph.D.
College of Agriculture and Life Science	Dept, of Landscape Architectre & Rural System Engineering	Master of Landscape Architecture, Ph.D.
Graduate School of Environmental Studies	Dept, of Environmental Landscape Architecture	Master of Landscape Architecture
	Interdisciplinary Program in Landscape Architecture	Ph.D. (Engineering)

## Education process

Department	# of Credits	# of Courses
New Courses	15	5 courses
Dept. of Civil and Environmental Engineering	61	20 courses
Dept. of Computer Science & Engineering	3	1 courses
Dept. of Architectural Engineering	3	1 courses
Technology, Management Economics and Policy Program	57	19 courses
Dept. of Engineering Practice	18	6 courses
School of Law	39	13 courses
Dept, of Landscape Architecture & Rural System Engineering	12	4 courses
Interdisciplinary Program in Agricultural and Forest Meteorology	3	1 courses
Interdisciplinary Program in Landscape Architecture	18	6 courses
Dept, of Environmental Landscape Architecture	11	4 courses

**Total**

**240**

**80 courses**

**5 New Courses: 15 credits**

**75 Existing Courses: 225 credits**

# Internal regulations

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**SNU Smart City Global Convergence**



## Regulations for the application

### ✓ Qualifications to apply for the convergence major

#### Qualifications on the credits earned and the semester completed

- Applicants should have completed at least **one regular semester** in each participating department & earned at least **six credits** before his/her first semester starts as a convergence major student
- Example) A student who wanted to apply for the convergence major for the 2020 Fall semester, should have completed at least one regular semester & earned at least six credits by September 1st, 2020

#### Participating department of the Smart City Global Convergence Major

##### Graduate school

- Department of Civil and Environmental Engineering
- Technology Management Economics and Policy Program (TEMEP)
- Law major (College of Law)
- Department of Landscape Architecture and Rural Systems Engineering
- (College of Agriculture and Life Science)

##### Graduate School of International Studies

- Department of International Studies

##### Graduate School of Environmental Studies

- Landscape Architecture

## Regulations for the operation of the convergence major in SNU

### Affiliation of a student

Students belong to the original department (major)

- **Current affiliation** of the applicant will be **kept unchanged** after being admitted to the convergence major

### Degree grant after completing the convergence major

A student will grant the degree from his/her original department (major) but with the additional record of the completing the convergence major

- ““The above person has completed the graduate school master's (doctoral) course (OO department, OO major, and interdisciplinary major, OOO), passed the prescribed examination and thesis examination, and passed the examination and thesis examination.”

## Regulations for the operation of the convergence major in SNU

### Credits for the convergence program

Credits for the completion of the convergence program (In total)

- 24 or more credits for the master's program
- 36 or more for the doctorate program
- 60 or more for the master's or doctorate integrated program

Credits that should be earned with the convergence program classes **ONLY**

- **More than one-fourth of the credits** that are required for the completion of each major should be earned from the classes that **are open by the Smart City Global Convergence Program**
- The list of the convergence program-held classes are uploaded on the website ([ismartcity.snu.ac.kr](http://ismartcity.snu.ac.kr))

Accreditation of dual credits between the original major & the convergence major

- **Common subjects** that are provided by the participating departments to the convergence major can be accredited to as dual credits for the original major

## Regulations for the operation of the convergence major in SNU

### Withdrawal of the convergence major

#### Availability of and the due date for the withdrawal

- A student who become a convergence major student but would like to withdraw the convergence major are able to cancel it if the student submit the withdrawal format (with the approval)
- However, the submission of the withdrawal **should be before** the end of his/her last semester of completion of masters/doctorate/integrated program
- **Caution!** The submission should be **before the completion of each student's program**, **NOT before the graduation** of each student's program

# Special Events

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**SNU Smart City Global Convergence**



## GSDV 2019 (Previous Event)

### [Opening Ceremony]

- **Opening Remarks**

- Prof. Junseok Hwang (Director of IITPP, Seoul National University)

- **Congratulatory Remarks**

- Hoon Sahib Soh (Special Representative, The World Bank)
  - Byong-Jin Kim (President, Busan Innovation Institute of Industry, Science & Technology (BISTEP))
  - Prof. Emeritus Jang Gyu Lee (College of Engineering, Seoul National University)
  - Prof. Eunnyeong Heo (President of Korea Society of Innovation)
  - (Representative to ASEAN)

- **2019 GSDV MoU Celebration**

- SNU GRC, WB, SHIHEUNG CITY, HCMUT, STEPI, KAIST, LX SIRI

Photo Session

### [Keynote Address]

- **Future of the City, City of the Future**

- Prof. Youngsang Kwon (Associate Professor, Director of Innovative Talent Education Program for Smart City, Seoul National University)

- **The Role of Digital Transformation in Supporting Smart & Sustainable Cities**

- Dr. Donovan Storey (Deputy Director and Urban Lead-Green Cities, Global Green Growth Institute(GGGI), Seoul)



### Session 1-1

Korea Smart City Project

### Session 2-1

Policy Resilience for the Innovative and Inclusive Society

### Session 3-1

Smart City Professional Training Projects (Innovative education for smart cities)

### Session 1-2

Global Smart City Project

### Session 2-2

Technology and Innovation Adoption in the 4IR Era

### Session 3-2

Opportunities and Challenges of Smart City Development

# GSDV 2020 (Upcoming Event)

## GREEN SMART DEVELOPMENT and VISION 2020 (Digital Symposia)

- Date: October 27 (Tuesday) – 30 (Friday), 2020
- Venue: Convention Hall (2F), Siheung Smart Campus, Seoul National University & KINTEX (World Smart City EXPO 2020)
- Topic: New Deal, New Innovation & New Normal Transformation

### (Day 1) Green Innovation

– GCF, WB Korea, GRC SNU

### (Day 2) Smart City Global Convergence

– STEPI, WB Korea, SCGS SNU

### (Day 3) Development for Future

– ITTP SNU, ITTP KAIST

### (Day 4) Vision for Smart Singularity

– SNU, Siheung City, Born2Global, SUPREME S

The specific timeline for the event will be announced soon.

협력 네트워크 구축* (MoU 체결 완료 및 예정)			
스마트시티·ICT 분야 벤처 · 중소 · 대기업	국제기구	공공 · 정부 기관	글로벌 교육기관
			

\*MoU 체결 완료 및 예정 (2020년 5월 기준)







## The 1<sup>st</sup> Supreme S Seminar (Previous Event)

### The 1<sup>st</sup> Supreme S Seminar

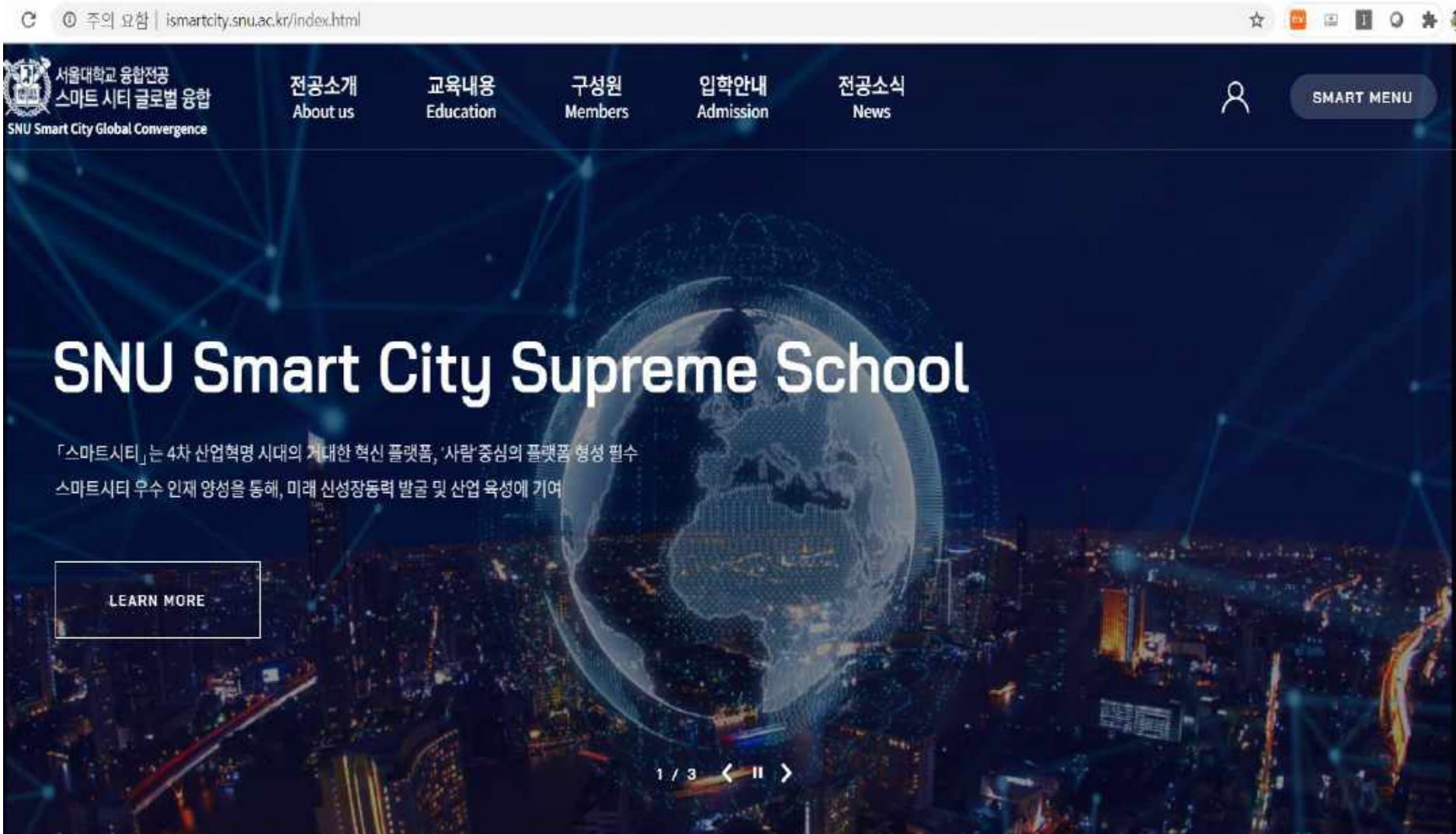
Celebrating Partnership of Inspiration, Knowledge, and Action for Global Green Transformation

- Date: July 28 (Tue), 2020 @ 15:00 ~ 18:00
- Venue: Room 109, Education Cooperation Building, SNU Siheung Campus
- Audience: Supreme S Members, I-STICK Students, SNU ITPP Students, GCF Interns, IEU Interns
- Special Venue: YouTube Live Broadcast (<https://www.youtube.com/watch?v=03sWDmicsqc>)





## Program Homepage (ismartcity.snu.ac.kr)



# Q & A