



4단계 BK21  
러닝헬스시스템융합교육연구단  
BK21 FOUR R&E Center for Learning Health System



BrainKorea21

# **BK21 FOUR L-HOPE Program**

## **for Community-Based Total Learning Health Systems**

# L-HOPE

# Introduction

## • Message from the Director

We pursue a community-based total learning health system that enables individuals to lead healthy lives and not merely curing diseases. The 'Learning Health Systems', which focuses on 'health' not 'medical treatment', is a self-evolving health system in which daily life is detailed and analyzed to create new knowledge and which continuously renews daily life.

For the implementation of this system, we create a virtuous cycle structure of education, research and industry-academic cooperation focused on the Living Lab. We particularly yearn to rebuild the crucial public health safety net as the learning health system paradigm and contribute to the creation of a society where everyone is healthy by focusing on the health promotion of people who may be more marginalized in the COVID-19 situation.

Aiming for this vision, we nurture world-class trans-disciplinary researchers who can lead a innovative digitally-integrated healthcare system by reorganizing the curriculum into four domains — Healthcare System, Biomedical Healthcare, Community Healthcare and Digital Health Data.

We hope to collaborate with researchers from around the world in this endeavour, to build public-focused value-based smart healthcare systems for all.

BK21 FOUR L-HOPE Program for Community-Based Total Learning Health Systems,  
Transdisciplinary Major in Learning Health Systems, Graduate School of Korea University

Haejoo Chung, RPh, MSc, PhD 정혜주

## • What is the BK21 FOUR Programs?

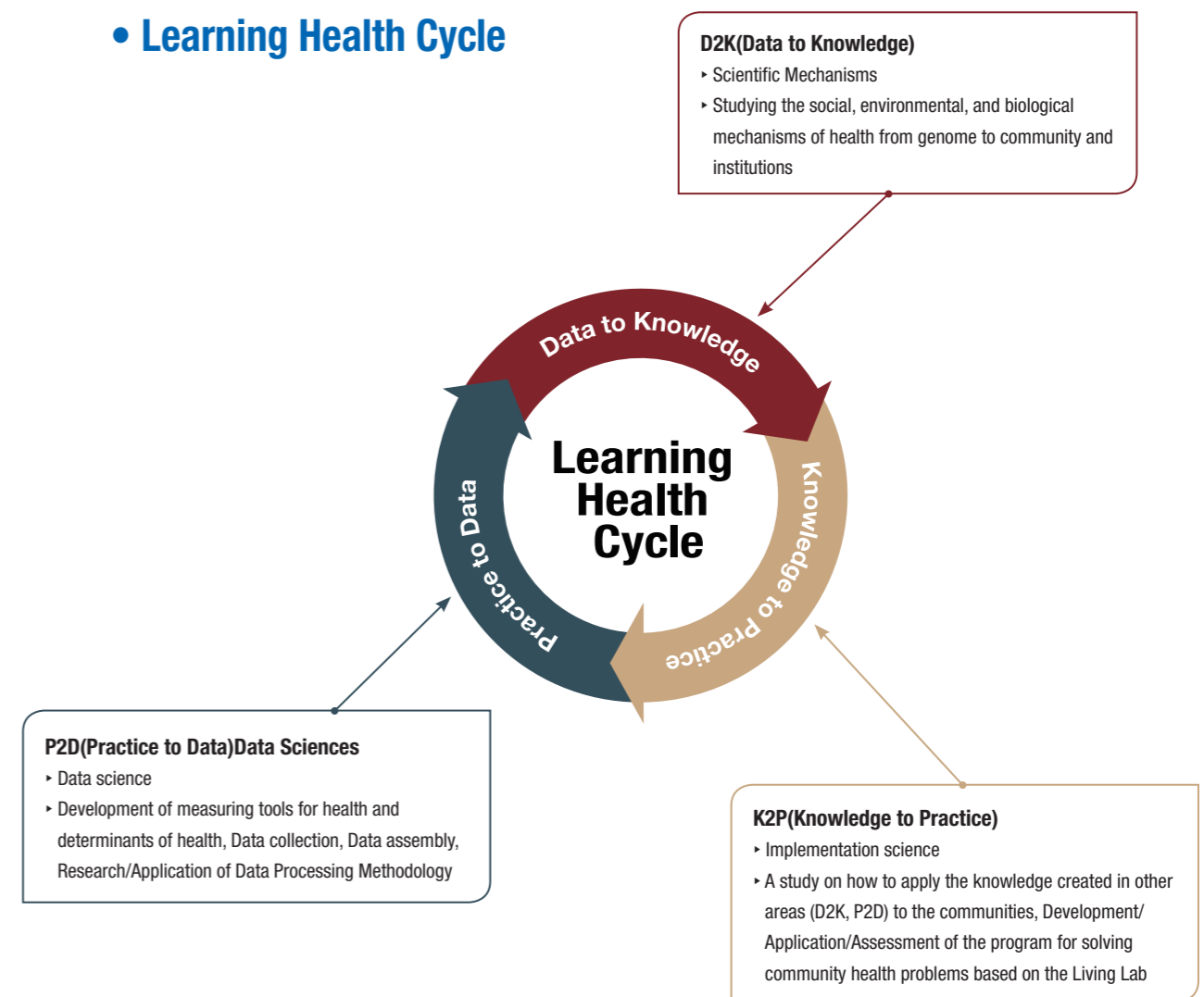
BK21 (Brain Korea 21) FOUR Program is a scholarship program for graduate students funded by the Korean government. The objective is to strengthen the teaching and research capacity of outstanding graduate schools and foster next-generation researchers in order to boost future national competitiveness. The program also supports new knowledge and skills based on creativity. The Transdisciplinary Major in Learning Health Systems (LHS) was launched at Korea University in September 2020.



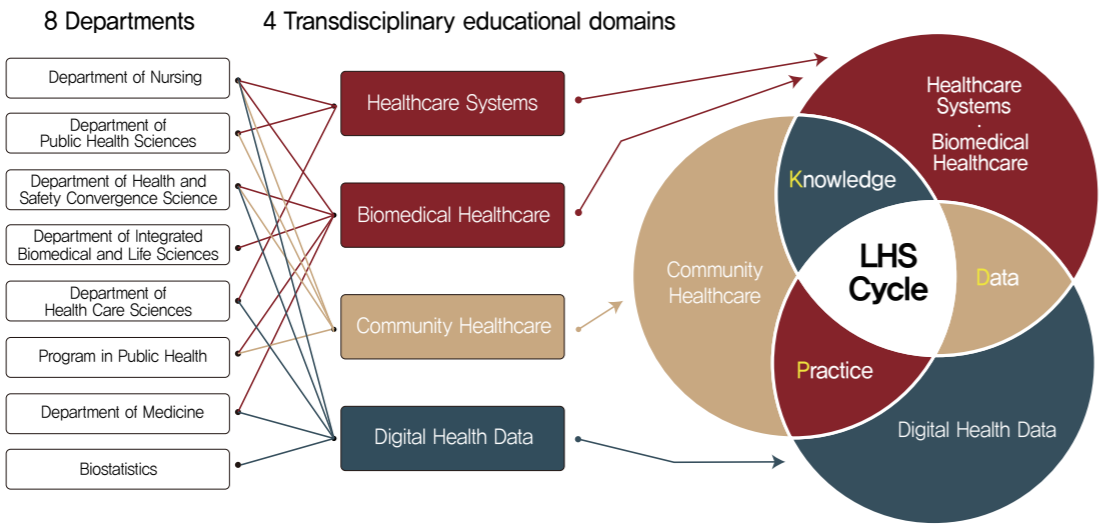
## • Learning Health Systems

The Learning Health Systems (LHS) is a self-evolving health system in which daily life is detailed and examined to generate new knowledge. It is also a system that continuously renews daily life. Through this, a community-based total learning health system was created to combine various community resources and provide a fully tailored healthcare solution by outlining, integrating, and sharing them, with the goal of creating the Living Lab.

## • Learning Health Cycle



- ▶ We categorize researchers from the eight departments participating in our program into four transdisciplinary educational domains of the Transdisciplinary Major in LHS and arrange them in a Learning Health Cycle. We can link our education and research based on the composition of research groups



D2K	Healthcare Systems	<ul style="list-style-type: none"><li>▶ A study on the social and environmental mechanism</li><li>▶ Research on Institutions and Governance</li></ul>
	Biomedical Healthcare	<ul style="list-style-type: none"><li>▶ Biomedical mechanism study on health</li><li>▶ Development of diagnostic technology</li><li>▶ Clinical data collection</li></ul>
K2P	Community Healthcare	<ul style="list-style-type: none"><li>▶ A study on how to apply the knowledge created in other educational domains (Healthcare Systems, Biomedical Healthcare, Digital Health Data) to the communities</li><li>▶ Development/Application/Assessment of the program for solving community health problems based on the Living Lab</li></ul>
P2D	Digital Health Data	<ul style="list-style-type: none"><li>▶ Measuring tools (survey, instruments, etc.) development studies on health research and biomedical/environmental/social determinants of health</li><li>▶ Data collection, data assembly and research on data processing methodology using the developed tools</li></ul>

• Transdisciplinary Curriculum

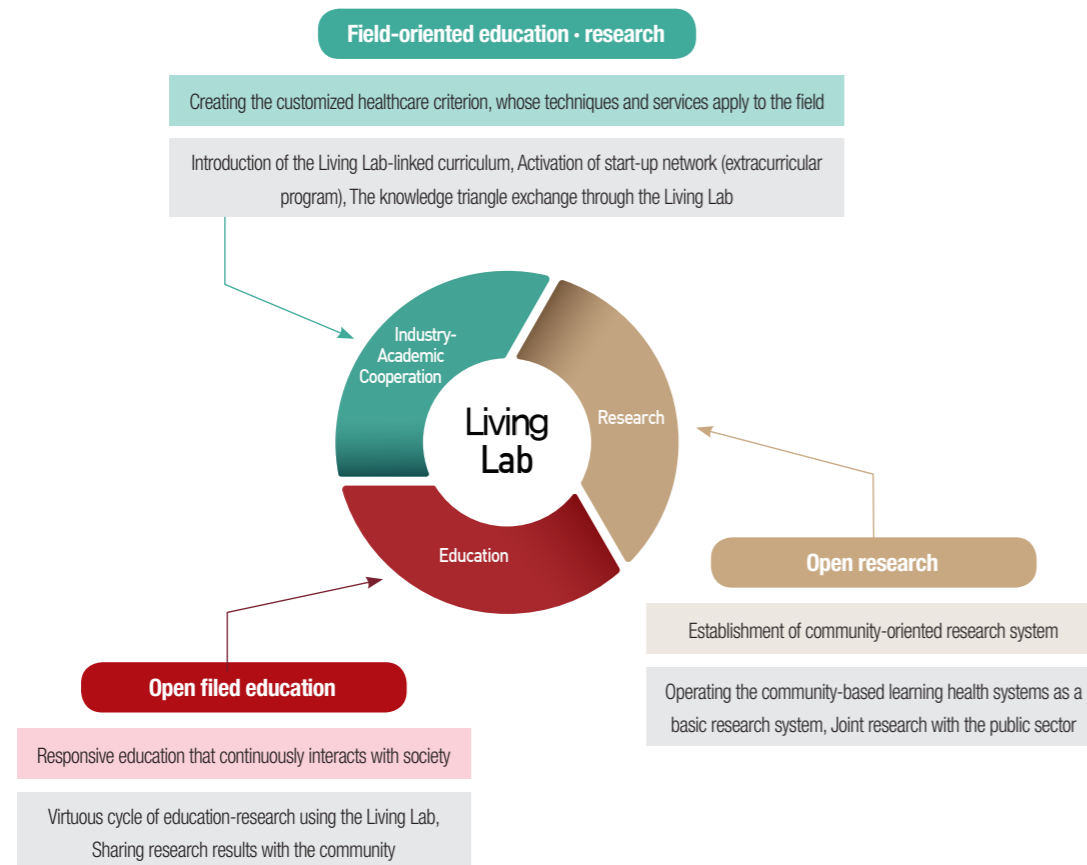
- ▶ To nurture experts in smart healthcare, **Transdisciplinary Major in LHS**, based on **four transdisciplinary education domains**, was established in the graduate curriculum in September 2020.
- ▶ We offer a transdisciplinary major that consists of a double major and a major substitution. Students should choose one of these options.

Option	Double Major	Major Substitution
Major	Stay in the original major	Change to LHS
Required Credits	<ul style="list-style-type: none"><li>▶ Students should fulfill the requirements of their original major and <b>take the extra credit of comajor (LHS)</b></li><li>▶ The original major and LHS can share 6 credits</li></ul>	<ul style="list-style-type: none"><li>▶ Students should fulfill the requirement of LHS</li></ul>
Degree	Degree Title (Department)	
Certificate	Department, Original major and LHS	Department, LHS

• Plan for supporting academic activities of graduates

- ▶ Scholarships are only available to eligible students
- ▶ Supporting academic activities and research in the customized healthcare field: providing opportunities to participate in seminars on major diseases, finding excellent multidisciplinary research projects, and coteaching from a variety of the research groups
- ▶ Host regular seminars and lectures with world-class scholars for on-campus academic exchanges
- ▶ Providing financial assistance for participation in conferences and short-term workshops: international/domestic academic conferences; international trips to organizations, institutes, and university workshop programs
- ▶ Providing incentives for the best research paper
- ▶ Programs to strengthen international research abilities: classes for writing proposals and papers in English, management of research profile, introduction to healthcare and LHS research data
- ▶ Operating career development program

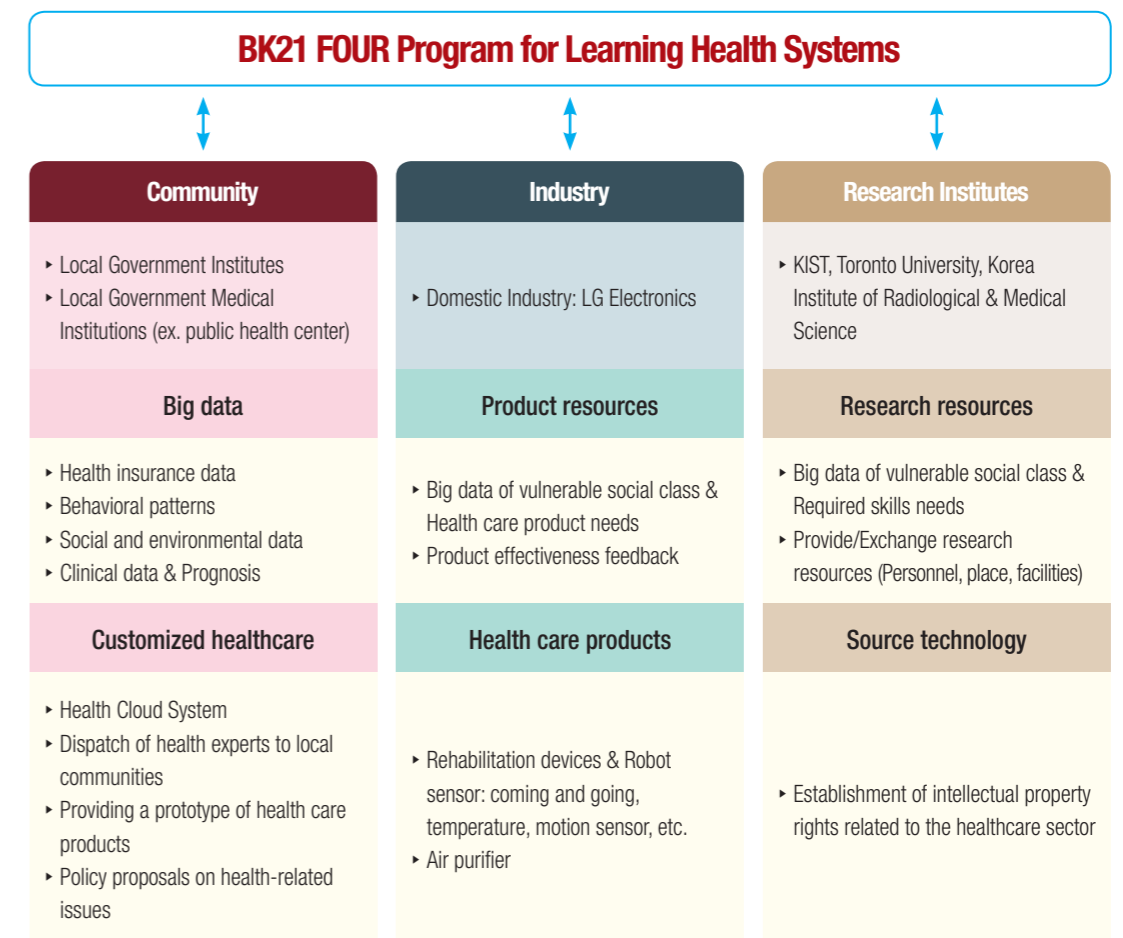
## • The Living Lab as a virtuous cycle structure of education, research and industry-academic cooperation



## • Plans for international joint research

Support for publication in international journals	<ul style="list-style-type: none"> <li>Promote international collaborative research through the academic research committee</li> <li>Support for article processing charges for OPEN ACCESS only publications in top international journals</li> </ul>
Exchange plans between foreign universities and research institutes	<ul style="list-style-type: none"> <li>Signed MOU, cohosting various academic events and establishment of exchange program for researchers</li> <li>Invitation of world-class researchers and outstanding scientists from abroad and support for staying in Korea</li> <li>Operating the Uzbekistan Tashkent National Medical University–Korea University cooperative research program and expanding to other countries</li> </ul>

## • Collaborations between industry and university



## • Faculty

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