

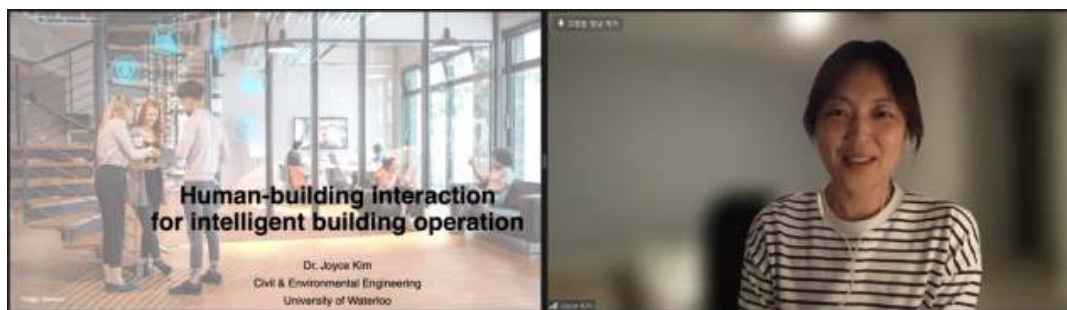
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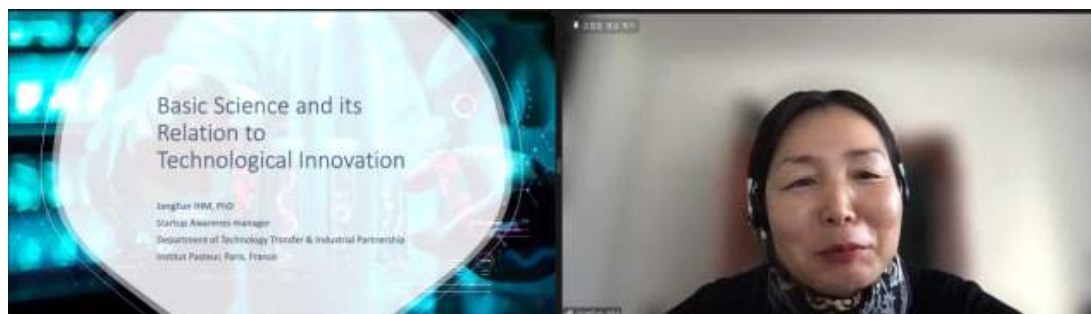
■ Women Scientists Global Webinar in September and October

The Women Scientists Global Webinar took place on September 27, 2023. Professor Joyce Kim from the University of Waterloo, Canada, presented on the topic 'Human-building Interaction for Intelligent Building Operation' to an audience of 30 scientists and engineers.



Roughly 60% of the world's energy consumed in buildings goes toward regulating indoor temperatures for occupant comfort. Surprisingly, a significant number of occupants express dissatisfaction with the thermal conditions within these buildings. Various factors contribute to this discomfort, but a major underlying issue is the conventional approach of providing consistent thermal settings without considering individual variations in comfort needs. To address these issues, a substantial amount of research has emerged, aiming to account for individual comfort preferences more effectively. During Prof. Kim's webinar, she outlined new advancements in personalized comfort technologies and analytical methods, demonstrating their potential to enhance thermal comfort, save energy, and bolster building resilience.

On October 11, 2023, Dr. Ihm Jong Eun from Institut Pasteur, France, delivered her presentation entitled 'Basic Science and Its Relation to Technological Innovation' in the presence of 25 scientists and engineers.



There has long been a perception among scientists that the field of basic science is disconnected from the development or commercialization of technology. Many researchers working in basic science find it challenging to align themselves with the inclination of universities and research institutes to innovate and transfer technology. During the webinar, Dr. Ihm explained the role of basic science and proposed its potential impact and direction in technology development and commercialization, followed by an interactive discussion with the audience.

Dr. Jun Sangmi from the Korea Basic Science Institute in Korea presented her talk titled 'Correlative Live-Cell Imaging and Cryo-Electron Tomography for 3D Structural Analysis.' Approximately 30 scholars from Korea, Canada, and the USA attended her webinar.



Cryo-electron tomography (cryoET) enables the three-dimensional visualization of cellular structures at a molecular level, offering a potential pathway to uncover early stages of HIV-1 infection within host cells in a state close to their natural form. However, the intricate details of HIV-1 during infection have not been observed due to technological hurdles in handling rare and dynamic HIV-1 particles within human cells.

In her research team's study, they presented a structural analysis of HIV-1 and its interactions with host cells, achieved through a method combining high-speed 3D live cell-imaging and cryoET. Employing this approach, they demonstrated that intact and highly stable mutant HIV-1 cores are released into the host cell cytoplasm under conditions resembling their natural state. Moreover, they acquired direct evidence indicating that a hyperstable mutant capsid, E45A, exhibits a delayed disassembly compared to the wild-type capsid. These findings collectively showcase the advantages of our combined live-cell and cryoET technique in capturing dynamic processes like viral infection, shedding light on previously inaccessible aspects of HIV-1 behavior during cellular interactions.