



KWSE-KWiSE Joint Forum on BT Convergence

Co-chairs: Dr. Hey-Kyoung Lee (KWiSE president) & Dr. Hye-On Yoon (KWSE president)

Thursday, August 15, 2019

August 15 Thursday, 4:00-6:00 PM, Room: Grand Ballroom G	
Forum: KWSE-KWiSE Joint Forum on BT Convergence	
Chair: Dr. Hey-Kyoung Lee (KWiSE, Johns Hopkins University) and Dr. Hye-On Yoon (KWSE, KBSI)	
Time	Title and Authors
4:00 PM	Title: Introduction Dr. Hey-Kyoung Lee (KWiSE) and Dr. Hye-On Yoon (KWSE)  
4:10 PM	Title: Automatized Statistical Monitoring of Staggered Entry Data Dr. Dong-Yun Kim (National Heart Lung and Blood Institute, NIH)
4:25 PM	Title: Bio-Medical Data Visualization Dr. Jinah Park (School of Computing, KAIST)
4:40 PM	Title: Unmasking Molecular Profiles of Urological Diseases Dr. Jayoung Kim (Cedars-Sinai Medical Center, UCLA)
4:55 PM	Title: Bionanotechnology-based Biosensor and Nanosafety Research Dr. Jinyoung Jeong (Environmental Diseases Research Center, KRIBB)
5:10 PM	Discussion Moderated by Dr. Jungsun Yun (Convergence Service Center, KISTI)

Objective:

The Association of Korean Women Scientists & Engineers (KWSE) and Korean-American Women in Science and Engineering (KWiSE) invite you to participate in the “Joint Forum on BT Convergence.” The main purpose of the forum is to foster collaboration and networking between Korean and Korean-American women in science and engineering fields. This year’s topic is on Biotechnology Convergence, which aims to bring on synergistic interaction between bioscience, data science and nanotechnology. Technical talks are followed by a general discussion, which will allow interaction between the participants to promote collaborations and partnerships.

Highlights of presentations:

The forum opened by introduction of KWiSE by Dr. Hey-Kyoung Lee (KWiSE president) and KWSE by Dr. Hye-On Yoon (KWSE president). Dr. Dong-Yun Kim (National Heart Lung and Blood Institute, NIH) was the first speaker, who introduced a statistical method that allows data monitoring, which will benefit large scale clinical trials by allowing scientists to enroll enough subjects in a rolling manner that can yield statistical power. This method, termed SPRM (sequential patient recruitment method), could in principle be adopted to any experimental data

that will benefit from statistical monitoring of results. The second speaker, Dr. Jinah Park (School of Computing, KAIST) followed by describing her research on computational visualization of biomedical data. She presented sample visualization methods that work on the scale of anatomical data from medical imaging to fine scale cellular compartmentalization images. The power of one of her methods was that it not only can work for 3 dimensional image data, but will work in 4D by incorporating time sequence images. Dr. Jayoung Kim (Cedars-Sinai Medical Center, UCLA) followed by presenting her research on adopting various “omics” approaches to urological diseases. In particular, she talked about the microbiome and mycobiome diversity in urine that can be used as biomarkers for different urological diseases. Dr. Jinyoung Jeong (Environmental Diseases Research Center, KRIBB) talked about her research on developing nanotechnology based biosensors, which has the potential benefit of fast real time detection. In addition, she talked about her research trying to use zebra fish for nanotoxicity study. Dr. Jungsun Yun (Convergence Service Center, KISTI) mediated the discussion.

Items identified for next “important” research:

Overall, the research projects presented has the potential for forging collaborations. For example, nanotechnology based biosensors could benefit detection of biomarkers for various urological diseases. Image analysis could be adopted to analyze biosensor data sets, and statistical analysis method introduced in this forum could be useful for monitoring changes in the biomarkers across a patient population. In general, the main challenge for fostering collaboration across biotechnology disciplines is identifying groups of scientists that can benefit from each other, which requires frequent exchange of information and establishing a database of research interests. In addition, support for workshops or seed grants will be necessary to initiate effective collaborations.

Photos:



