

**Korean-American Women in Science and Engineering**



**NEWSLETTER**

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Dear KWiSE members,



As we start 2020, I wish everyone a prosperous and happy new year! 2019 has been a great year for KWiSE, and I thank all of you for participating in our activities and supporting our cause. I would first like to thank our chapter presidents for their amazing leadership and for organizing various chapter events. A few of our chapters now have new presidents to lead them through the remainder of our 7th Administration: Dr. Jinyoung Barnaby-Yang (ARS, USDA) at the Greater DC Chapter, Dr. Mee Young Hong (San Diego State Univ.) at the San Diego Chapter, and Dr. Yangjin Bae (Baylor College of Medicine) at the Texas Chapter. Chapter presidents continuing their term are: Dr. Jayoung Kim (Cedars Sinai Medical Ctr) at the Los Angeles Chapter, Dr. Dong-Yun Kim (NIH) at the NIH Chapter, Dr. HeaYeon Lee (Mara Nano Tech Inc.) at the NY/NJ Chapter, and Dr. Mi Hyeon Jeon (WSP) at the Southeastern Chapter. I look forward to continue working with them to build a stronger KWiSE community and lead our initiatives for the remainder of our year.

Here I would like to briefly highlight our main events in 2019. In May, we held our Annual Conference across 5 locations with over 300 participants in total. Our Annual Conference comprised of scientific sessions as well as career development and networking sessions. The topics of this year’s Annual conference ranged from Life Science & Data Science to Applied Science for Human Health. Conference report is posted on our website ([www.kwise.org](http://www.kwise.org)) and also summarized in this Newsletter. Many chapters held mentoring events, which I believe is essential for strengthening our network. In August, KWiSE organized a couple of Forums and a technical session at the 2019 US-Korea Conference (UKC2019) that was held in Chicago. As in the past, we co-hosted the Women’s Forum with the Korea Federation of Women’s Science and Technological Associations (KOFWST). The topic of this year’s forum was “The role of Women in STEM, Education, and Policy for the 4th Industrial Revolution.” We exchanged ideas on how we can best prepare ourselves to actively participate and act as leaders in the 4th Industrial Revolution. In addition, we jointly organized a session on “Biotechnology (BT) Convergence” with the Association of Korean Women Scientists & Engineers (KWSE). This forum was specifically designed to promote scientific collaboration between KWiSE and KWSE members. We plan to expand on such activities to facilitate scientific collaborations and exchanges with our Korean counterparts. To this end, KWiSE-NIH chapter has started a collaboration with KWSE to run 2020 KWSE-KWiSE Virtual Seminar, which will be open to all KWiSE members. The details will be posted on our website ([www.kwise.org](http://www.kwise.org)). Continuing on with the initiative started at the last UKC2018, KWiSE organized a technical session. This year’s session was on Neuroscience-Molecular Physiology. KWiSE will continue to be active at future UKC to promote our role in science and engineering fields. I hope many of you will participate in UKC2020, which will be in Los Angeles.

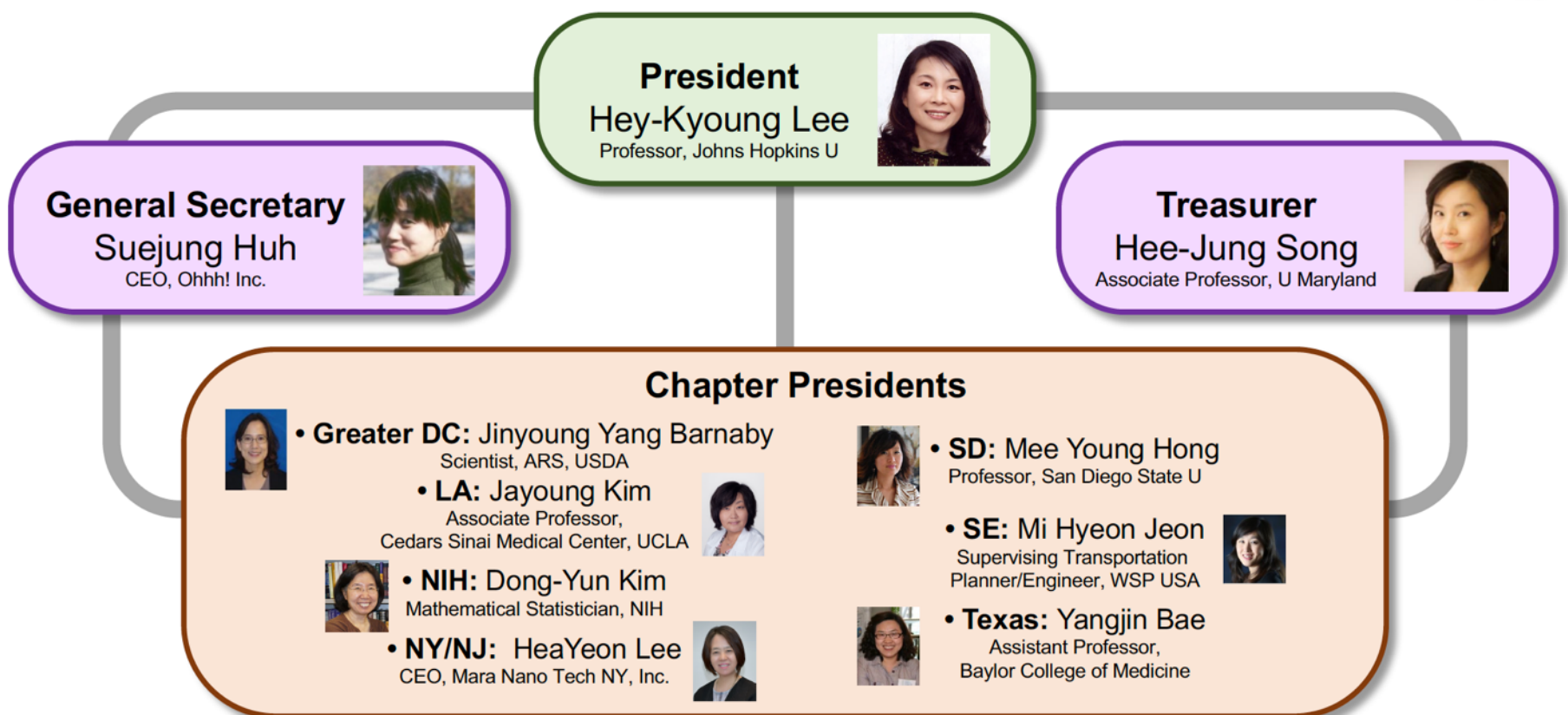
In the beginning of November 2019, I was able to participate at the GNet Forum in Korea, which was organized by KOFWST. This year’s topic was on “How to build a career in Science & Technology as a minority group.” It was clear

from the discussions at the meeting that Korean women in STEM (Science, Technology, Engineering & Mathematics) fields are a true minority and negatively impacted for promotion due to a double bind: confronted by a “glass ceiling” due to our gender and a “bamboo ceiling” due to our ethnic background. While such impediments to our success seems grave, I believe we as a group will be able to overcome such obstacles. I strongly believe, establishing a strong support network that can provide mentoring and career development advice is essential for our success. In addition, having an advocacy organization, like KWiSE, is important for breaking any barriers that hinder our true recognition. I hold my optimism that the future will be brighter for our next generation, because of all the hard work put in by our predecessors and our peers. KWiSE is planning to expand on our outreach activities to actively engage our community and encourage our future generation. I would like to end by recommending to you to reach out and make new connections with one another by actively participating in KWiSE activities and through our social media network. Together, we can make a difference!

Sincerely Yours,  
Hey-Kyoung Lee  
KWiSE President

## KWiSE 7th Administration Organization

### KWiSE 7<sup>th</sup> Administration Organization



In addition to the KWiSE Steering Committee above, KWiSE headquarter (HQ) activities are advised by the KWiSE Advisory Committee, which is comprised of the past KWiSE presidents: Dr. Gye Won Han (1<sup>st</sup>), Dr. Sanghee Yoo (2<sup>nd</sup>), Dr. Haejung An (3<sup>rd</sup>), Dr. Eun-Suk Seo (4<sup>th</sup>), Dr. Jane Oh (5<sup>th</sup>), and Dr. Hee-Yong Kim (6<sup>th</sup>).

Dr. Eun Kyung Hwang (NIDA, NIH) and Dr. Yuyoung Joo (Univ. Maryland School of Medicine) are serving as Publication Officers for the 7<sup>th</sup> Administration.



## Missions of KWiSE

KWiSE serves Korean-American Women in Science & Engineering to promote networking for:

- Technical excellence
- Career development
- Professional collaboration
- Mentoring future generation
- US Korea cooperation

## Conference Report

### 2019 GNet Forum Report (2019 글로벌 한인 여성 과학기술단체 네트워크 포럼)

Nov. 14, 2019

2019 GNet Forum was organized by the Korea Federation of Women's Science & Technology Associations (KOFWST, 한국여성과학기술단체총연합회) in Seoul, Korea on November 14, 2019. The topic of this year's GNet Forum was "How to Build a Career in Science & Technology as a Minority Group." Korean Women leaders representing various STEM (Science, Technology, Engineering & Math) organizations across the globe gathered to present data from each country as well as discuss potential solutions to the problem. This report is provided by Dr. Hey-Kyoung Lee (이혜경), the KWiSE president, who represented

KWiSE at this forum.



The GNet Forum was opened by a welcome remark by Dr. Myeong-Hee Yu (유명희), the President of KOFWST. This was followed by a brief summary of the participation of KOFWST in foreign Korean led conferences by Dr. MiHye Kim (김미혜, Professor, 충북대학). Attorney Junhwan Chang (Chang Law Group) gave a presentation on case studies of Korean scientists that are working in USA as interns on J-1 visa. He emphasized the importance of providing interns with a white paper outlining where to get legal help as needed, and introduced the concept of using an "electronic purse" system to aid them when situations arise.

The main session started with a presentation from Dr. Hyong Sil Cho (조형실, Director of SiLnD, Netherlands/Belgium) from European-Korean Women in Science and Engineering Association (EKWSEA). She briefly outlined the main events organized by EKWSEA as an introduction, and gave a presentation on gender gap and female leadership in Korea. She pointed out that Korea has large gender gap index, which is largely driven by culture of leadership that emphasizes authority and lack of general inclusiveness. Dr. Cho pointed out many benefits of having female leaders, one of which is that it helps promote innovation and competitiveness in business.

Dr. Sunny Cho (조선희, Professor, University of Alberta), who is the director of Women in Science and Engineering (WiSE) at the Association of Korean-Canadian Scientists and Engineers (AKCSE), then followed with her presentation. She started by outlining the status of immigration in STEM areas in Canada, which showed a clear increase in immigration from Asian countries in recent years. She stated the "visible minorities," defined as non-white and non-indigenous population, makes up about a third of Canada's workforce in STEM areas. However, there is a clear gender pay gap for visible minorities, which is larger for females. She suggested that women in particular face gender-specific stereotypes, which hinder employment and integration into the workforce. Having a strong language skill was considered necessary for success, as well as integrating cross-cultural awareness and skill building into workplace practices.

Next speaker was Dr. Hey-Kyoung Lee (이혜경, Professor, Johns Hopkins University), the president of Korean-American Women in Science and Engineering (KWiSE). She briefly provided an overview of KWiSE organization and its missions. She first provided demographics of Asian American in the USA, where they constitute about 5% of the population and of them about 9% are Korean or Korean decent. She then introduced the concept of the "model minority," which is a term used to describe the successes of Asian Americans. However, she provided statistics showing that while Asian Americans are highly educated and tend to have higher socioeconomic status, they are negatively impacted at the level of leadership positions in the STEM related jobs across academia, government and industry. In particular, Asian-American women show the lowest percentage in leadership roles compared to other races. Building a support network and breaking stereotype were pointed out as necessary to promote



success of Korean-American women in STEM, which would be accelerated by mentoring and advocacy provided by organizations, such as KWise.

Dr. Mira Park (박미라 Professor, University of Tasmania), the president of Korean Women Scientists and Engineers in Asia Pacific (KOWSEAP), followed as the last speaker of the session. She gave the demographics of people in STEM fields in Australia, where Asian women constitute about 7% of the workforce, which is higher than Asian men (4%). Despite this there is a large pay gap where women receive less salary. She pointed out bias/stereotype, lack of flexible work arrangements, and lack of female role model as potential cause. She provided a list of government actions that are geared to enhance women participation in STEM related jobs in Australia: the main one being the SAGE (Science in Australia Gender Equity) Program. In addition, funds are allocated for scholarships, internships and mentoring program for women in STEM. Dr. Park ended her talk by introducing the White Ribbon action, which is to raise awareness and support for enhancing inclusiveness in society.

## KWise-KOFWST Women's Forum (UKC2019)

Aug. 20, 2019



Korean-American Women in Science and Engineering (KWise) and Korea Federation of Women's Science & Technology (KOFWST) cordially invite you to the Women's Forum entitled "The Role of Women in STEM, Education, and Policy for the 4<sup>th</sup> Industrial Revolution." This forum is open to both genders, and its goal is to exchange ideas on how to promote and empower women scientists in the various STEM fields, and to share information on education and policy needed for this process. KWise-KOFWST forum will provide an environment for open discussion and nurturing of partnerships and friendships. The forum is designed to be an interactive and engaging event to foster networking and mentoring among the attendees. It will be an excellent opportunity

to learn and get inspiration from each other in order to allow women scientists and engineers to engage effectively as leaders and active participants in the 4<sup>th</sup> Industrial Revolution.

### Highlights of presentations

The forum started by brief introduction of KWise by Dr. Hey-Kyoung Lee (KWise president) and KOFWST by Dr. Myeong-Hee Yu (KOFWST president). The first speaker was Dr. Myoungsook Oh (WISSET president, Hongik University), who talked about challenges and strategies to provide a more inclusive STEM education. Her main point was focused on how to encourage female in male-dominated STEM education. She explained that we need to avoid male-oriented curriculum, which can alienate female students. One way to achieve this is to put the emphasis on social relevance of engineering solutions, which taps into the innate emphasis women put on social values. In addition, early exposure to STEM disciplines was pointed out as key, as well as putting effort on designing gender inclusive content in class syllabus. Arranging student forum that allows male and female students to exchange their own perspectives on gender issues was pointed out as one idea to promote diversity. The second speaker, Dr. Elizabeth Quinlan (University of Maryland), unfortunately had to cancel her talk due to a family emergency. The third speaker was Attorney Junhwan Chang (Chang Law Group), who talked about how to invest in intellectual property (IP). One of the points brought up was that scientists, especially women scientists, are not well informed of profitability of IP investment. He suggested that starting investment on IP that is close to one's research area is likely a good strategy. The fourth speaker was Dr. Hee-Jung Chung (University of Illinois Urbana-Champaign). She provided lists of challenges faced by women in STEM in academia. Promotion gap, disproportionate time spend on various service activities, unconscious biases, and difficulty in balancing work & family were pointed out as major hurdles that negatively impact promotion and career advancement of STEM women faculty in academia. Dr. Chung discussed a few potential solutions to overcome these challenges, which ranged from raising awareness of disproportionate service burden, responding to negative stereotypes in an objective and professional manner, actively promoting one's own research, and gaining help from partner/family that can help maximize work efficiency. The talks were followed by a panel discussion, which were mediated by Dr. MiHye Kim (Chungbuk National University) and Dr. Suk Kyoeng Lee (Catholic University of Korea). Dr. In-Sun Lee (Commissioner of DGFEZ) shared her experience that led to various leadership positions, and how she managed her demanding career by focusing on networking and building relationships that can mutually benefit each other. She also emphasized that women can use their emotions to engage others effectively in group settings. Dr. Dong-Yun Kim (NIH) emphasized effective communication across all fronts as key to success. Dr. Jayoung Kim (Cedar-Sinai Medical Center, UCLA) shared her view how venues such as this forum allows women scientists to gain comfort and support from each other.

### Items identified for next "important" research:

Clearly there are challenges at multiple levels that need effective management in order for women in STEM to advance in their



career path to be leaders in their fields. This has to happen across multiple fronts ranging from education, mentoring, raising awareness in work places as well as in society. The greatest challenge is figuring out how to break innate negative biases set against women in STEM fields, which would require continuing discussions that can lead to creative solutions.

## KWiSE-Neuroscience & Molecular Physiology (UKC2019)

Aug. 15, 2019

**Key messages:** The main goal of this session was to introduce cutting-edge research in the fields of neuroscience and molecular physiology. The first speaker Dr. Eunji Cheong (Yonsei Univ.) talked about a novel cellular mechanism that mediates tonic inhibition in sensory thalamus, which plays a critical role in gating sensory information for conscious processing. Dr. Hee-Jung Chung (Univ. Illinois) presented new molecular regulatory mechanisms of neuronal potassium channels, which have known mutations in human population with epilepsy and autism. Dr. Myung-Hee Park (NIH) talked about a translational regulator, eIF5A, which is a sole substrate of deoxyhypusine synthase. Such regulation of eIF5A has implications in early embryonic development of the brain. Dr. Alfredo Kirkwood (Johns Hopkins Univ.) presented data that counters the conventional view that excitation to inhibition (E/I) balance is fixed in neurons. His research presents a novel idea that E/I balance is dynamically regulated during the day depending on the need of the brain state. Dr. Hong Su (Johns Hopkins Univ.) talked about his new findings relating to the molecular mechanisms of the memory eligibility trace, which is critical for mediating reward based learning. Dr. Jean-Ju Chung (Yale Univ.) gave a presentation on the molecular mechanisms of regulation of calcium channels in the context of regulating sperm mobility, which has clear implications to infertility problems.

**Critical challenges:** Speakers in this session presented data obtained from multiple cutting-edge techniques ranging from molecular genetics, bioinformatics, cell biology, electrophysiology coupled with optogenetics, *in vivo* optical imaging to behavioral analyses. Such multidisciplinary approaches are quite powerful in generating a comprehensive view of the system, but presents challenges that require close collaboration of laboratories with specific expertise and constant exchange of ideas.

**Future direction:** Molecular and cellular approaches to neuroscience and physiology is primed to produce information on fundamental mechanisms governing function. Collaborative endeavor across disciplines is likely a productive path that will yield much needed mechanistic information on normal physiology as well as during pathological disease states.

## KWSE-KWiSE Joint Forum on BT Convergence (UKC 2019)

Aug. 20, 2019

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.

## 2019 KWiSE East Coast Annual Conference Report

### KWiSE NIH-DC Chapter Joint Symposium 2019

May 4, 2019

**Theme: Life Science & Data Science**

Annual KWiSE NIH-DC Chapter Joint Symposium was held at the KUSCO conference room (1952 Gallows Rd., Vienna, VA, 22182) on May 4, 2019. About 80 members gathered for this event. The NIH Chapter president Dr. Dong-Yun Kim (NIH) opened the meeting with a welcome remark, which was followed by a brief introduction of the KWiSE missions and activities summarized by the KWiSE Headquarter president Dr. Hey-Kyoung Lee (Johns Hopkins University). Dr. Luke Oh (KAPAL President) and Mr. Dong-Gi Kim (Consul General, Republic of Korea) also cheered the event and recognized the efforts for Korean American Women Scientists.

The morning Keynote session was chaired by Dr. Myung Hee Park, who introduced the Keynote speaker Dr. Janice Lee, Clinical Director, NIDCR/NIH. As an Asian-American clinician, she shared her 'aha' moment during her conversation with one of Asian-American patients, which led her to study the impact of acculturation levels on personalized orthognathic surgery for the Asian-American patient. She showed that the level of acculturation among Asians living in the USA played a significant role in their opinion of facial profiles. The orthognathic treatment plan could be tailored with culture, preference, and perception in consideration to improve patient satisfaction.



[Picture 1] The keynote speaker, Dr. Janice Lee (Clinical Director, NIDCR/NIH)



[Picture 2] The keynote speaker for Career Development Session I, Dr. Chee Yeun Chung (Scientific Co-founder & Director, Discovery Biology)



[Picture 3] The keynote speaker for Career Development Session II, Dr. Cyrillene Clark (Founder & CEO, Crichlow Clark Group)

The scientific sessions including Life Science and Data Science were followed up. The constitution of two scientific sessions were an approach to broadening the scope of the symposium. The session was chaired by Dr. Eunkyung An from mProbe Inc. In the Life Science session, Dr. Xiaoyuan (Shawn) Chen, a senior investigator and chief of the laboratory of molecular imaging and nanomedicine in National Institute of Biomedical Imaging and Bioengineering, gave his talk on albumin binders. Dr. Chen, Ph.D. in Chemistry, explained 3 D structure of human serum albumin (HSA) and its properties - a protein and fatty acid carrier in blood circulation. Because of its property, many drugs were developed to bind HSA to circulate in blood stream for treating cancer, diabetic, and high cholesterol. Dr. Chen introduced multiple HSA binders and focusing on Evans blue which may improve pharmacokinetics and pharmacodynamics and preliminary data of Evans blue as an excellent platform for effective targeting and sustained drug release. Dr. Myoung-Hee (Mia) Sung, an independent investigator at laboratory of molecular biology and immunology at national institute on Aging presented about NF-kB dynamics. Dr. Sung, Ph.D in Mathematics, monitored NF-kB signaling using live cell imaging to quantitate how immune cells and non-immune cells respond to pathogen-derived stimuli. Dr. Sung showed oscillation of the response of a single cell and explained that because each cell is not synchronized in the response oscillation, response graph of multiple cells is differently plotted in the text book. Her group also performed detailed analysis of total RNA-seq to integrate quantitative features of NF-kB dynamics and found a core cluster and cell type-sceptic clusters of NF-kB dynamics-decoding genes. Dr. Sung finished her presentation by a systematic comparison NF-kB signaling in two cell types in



parallel. Dr. Sun J. Kang (Staff Scientist, NIMH/NIH) led the second scientific session, Data Science. With a title of “An Overview of Genomic Data Science,” Dr. Ryan Dale (Scientific Information Officer and Developmental Biologist, NICDH/NIH) provided an overview of high-throughput genome sequencing data analysis which relies on open source software packages (e.g., Bioconda, Snakemake, etc.). In presenting various analysis approaches for genomics, computational biology, algorithm design, software engineering, data integration and visualization, Dr. Ryan emphasized the importance of working closely with researchers to understand the underlying biology that can result in the best possible analysis. In doing so, the speaker noted that bioinformatics can serve as a critical component of biological research. Dr. Ethan Xu (Applied Data Scientist, Amazon) outlined the data science field with a title of “But What Is Data Science?” Dr Xu’s presentation was instrumental in grasping the landscape of data science, which has gained an increasing attention in society. Dr. Xu started with his experience in conducting research over large solar energy data and shared his experience in developing analytical pipelines to monitor electronic healthcare records. Dr. Xu presented the development of neural network based models showing how Deep Neural Networking (DNN) was more productive compared to the other methods such as Regression, Random Forest, Support Vector Machine since the other methods stopped to increase productivity. His experience in transitioning from a statistician to a data scientist was interesting. His perspective into the requisite skill sets, roles and responsibilities of data scientist was valuable.

The poster session was newly added to this year’s symposium in an attempt to lift up young scientists’ participation level. There were fourteen posters submitted, and each present pitched on his or her research within 2 minutes, as part of the review process. The poster session was open from 1:00pm to 2:00pm during a lunch break.

The Career Development Session I was chaired by Dr. DoHwan Park. The second keynote speaker, Dr. Chee Yeun Chung (Scientific Co-founder and Director, Discovery Biology, Yumanity Theorpeutics), presented a talk entitled “From Yeast to Neurons to Patients: A novel Drug Discovery Platform for Nerudegenerative Diseases.” She shared her personal entrepreneurial journey of venturing a start-up company. After Dr. Chung’s presentation, four inspiring career development talks were ensued. Dr. Haeyoung Ahn (AhnBio Consulting) shared her career wisdom, underscoring how much invaluable we acknowledge ourselves as highly competitive and skillful at the time of seeking jobs or changing careers. Mr. James Kim (CEO, JK Accounting Group) provided an informative talk entitled “Business Types and Foreign Accounts: An Overview.” He imparted his knowledge in taxation and accounting which may be useful for professionals who wish to start independent businesses in future. Dr. Anna Hahn (Director, OD/NIH)’s presentation entitled “Being a Self-Advocate for Diversity and Inclusion” was short, but impactful. She warned the actual existence of cognitive biases based on ethnicity and gender in workforces. Dr. Jinyoung Barnaby led a panel discussion, eliciting thought-provoking questions from the floor.

The Career Development Session II, followed by a short coffee break, was chaired by Dr. Hyojin Kim at the Catholic University of America, who introduced the third Keynote speaker, Dr. Cyrillene Clark. Dr. Clark founded her own consulting firm, Crichlow Clark Group. She explained about the two different aspects (i.e., art and science) of leadership, what makes a good leader, and how we can join the ranks of successful leaders. Her discourse also included the unique aspects and challenges for women’s leadership, followed by an introduction of the Center for Creative Leadership (CCL) and their various programs, including Women’s Leadership Experience and Advancing Technical Women. Her talk was inspirational and informative.

Dr. Heiyoung Park is a program director of Scleroderma, Fibrosis, and Autoinflammatory Disease program at National Institute of Arthritis and Musculoskeletal and Skin Diseases, and she shared her career path from a biologist to a health scientist administrator at NIH. Dr. Park discussed how to improve a chance for interview after applying for a health scientist administrator position. She emphasized networking is second to none. Dr. Inyoung Kim is an associate professor at Department of Statistics, Virginia Polytechnic Institute. She shared how to build collaborative relationships when collaborators seemed to be doubtful about your research capacity. The seven different principles based on her experiences were shared. Dr. Ji Hyun Lee (NIAID/NIH, Imaging Lead) chaired the second career development session, soliciting feedback from the floor.

In concluding the symposium, Dr. Dong-Yun Kim recognized three poster presenters. The meeting was concluded by a closing remark from Dr. Younsung Kim (George Mason University). Many of the mentors and mentees gathered for dinner at the Woo Rae Ok (8240 Leesburg Pike, Vienna, VA) restaurant to network and continue the discussions on various topics related to career options and how to overcome difficulties facing women in science. Drs. Sohyoung Kim and Minkyong Song kindly lead the mentor discussion session, helping seasoned professionals mingled with graduate students, post-docs, and young professionals who started build their careers.



[Picture 4] KWiSE members and speakers at the 2019 KWiSE NIH-DC Chapter Joint Symposium 2019.



## 2019 KWise West Coast Annual Conference Report

### 13th Korean American Women in Science and Engineering (KWise) Westcoast Annual Conference

May 4, 2019.

**Chaired by Dr. Jayoung Kim at Cedars-Sinai Medical Center, Dept. of Surgery.  
Over 150 Korean-American scientists, engineers, and physicians attended this conference.**



[Picture 1] Group photo

field and graduate/undergraduate students from CalTech, USC, UCLA, UC Riverside, Biola University, Pomona University et al. Our members are from a variety of fields, including healthcare, engineering, pharmaceuticals, patent law, bioengineering, etc. - What was this year's theme? This year's theme was "Applied Science for Human Health". We carefully selected relevant lectures to present to our scientific community. The main question we asked was: how will scientific progress and development contribute to human health? Our speakers were chosen after well-thought processing by the committee. Our guests included the Cancer Center Director from Cedars-Sinai Medical Center, faculty members from UC Riverside, biotech researchers, and IT CEOs. Research trends in their field and career advice were shared with all attendees.

Tell me about invited speakers and their lectures Our first speaker was Prof. Diane Woodbridge, who is an assistant professor in the data sciences program at the University of San Francisco. Her specialties include database management systems, data fusion, and data mining. Prof. Woodbridge's talk was on a scalable smartwatch-based medication adherence system that would provide accurate real-time management of medication compliance. Our second speaker was Prof. Nosang Vincent Myung, who is the current director for the UC-KIMS Center for Innovative Materials for Energy and the Environment and codirector for the Winston Chung Global Energy Center. He received his PhD in chemical engineering at UCLA and worked as part of the engineering staff at NASA Jet Propulsion Laboratory for several years. His talk focused on high-density chemical sensor arrays. The third speaker was Prof. Dan Theodorescu, who is the current director of the Samuel Oschin Comprehensive Cancer Institute at Cedars-Sinai



[Picture 2] (Left to right) Dong Hee Kim, CS Korean Community coordinator; Dr. Rachel Chang, CS clinical fellow, Dr. Dan Theodorescu (Director of CS SOCCI), Dr. Jay Kim (CS, Dept. of Surgery)

Medical Center. Prof. Theodorescu's work focuses on three core areas: 1) precision medicine, 2) use of "big data" to solve difficult research or treatment questions, and 3) population health. His opening keynote address was on translating biology into therapies against human cancer. Our fourth talk was titled, "Navigating Drug Discovery Career Pathway", and was given by Dr. Eun Jeong Yoo, an industrial expert in pharmaceuticals. She is currently an in vivo pharmacologist at Wuxi Apptec, one of the largest contact research organizations, and is focusing on preclinical drug development for immune therapy. The fifth speaker was Dr. Minjung Kim, an Assistant Professor of University of South Florida, an animal model expert for melanoma research. Her talk was titled, "Discovery of novel melanoma targets: Comparative genomics approach". The final and closing keynote speaker was Prof. Paul W. Ferguson, the Dean of the School of Science, Technology, and Health at Biola University. He also serves as a professor in toxicology at Biola. His talk was on how to develop leaders in the STEM field with passion and purpose.



Who were involved in conference committee? The conference committee consisted of two co-chairs and three staff members. The two co-chairs were Prof. Jayoung Kim, the current president of KWiSE Los Angeles, and Prof. Hyuna Lee, the current vice president of KWiSE Los Angeles. Prof. Kim is an active principal investigator and associate professor at Cedars-Sinai Medical Center and UCLA.

Prof. Lee serves as part of the BIOS Reseach Committee Chair and is also conducting her own research at Biola. The morning session chair was Prof. Eun Jung Chae, who is currently an assistant professor in the department of mechanical and aerospace engineering at CSULB. The mentoring session chair was Dr. Janet Hur, the CEO and cofounder of Millibatt, Inc. The support team chair was Gayeoun Kim, a recent B.S. graduate and researcher at the Doheny Eye Institute.

What was the most interesting lecture to KWiSE members? “Driving research to realize powerful treatments and exquisite care for patients facing cancer.” This vision guides Dr. Dan Theodorescu as he leads an integrated team of investigators and physicians to identify creative approaches that will shape modern cancer care. His mission focuses on three core areas: precision medicine to personalize treatments; “big data” to solve difficult research and treatment questions; and population health ideas to improve the lives of our patient community. His talk was about translating biology into therapies of human cancer, and was well received by KWiSE members.

## 2019 KWiSE NY/NJ Annual Conference Report

### 2019 KWiSE NY/NJ Annual Conference

May 4, 2019

**Theme: For Women in Life Science**

Location: University Hall 4116, Montclair State University

Organizers:

HeaYeon Lee, Ph.D., Founder/CEO of Mara-Nanotech New York, Inc.

Sung Eun Choi, Ph.D., Associate Professor, Queens College

Yeon Bai, Ph.D., Professor, Montclair State University

Yuen Mi Cheon, Ph.D., Postdoctoral Fellow, Fordham University



The 2019 KWiSE New York/New Jersey Chapter Regional Conference was held on Saturday, the 4th of May, 2019 at Montclair State University. Under the theme of “For Women in Life Science,” this year’s conference featured three scholars from the fields of Environmental and Occupational Health, Family Science and Human Development, and Psychology. The organizers were Drs. HeaYeon Lee (Founder/CEO of Mara-Nanotech New York, Inc.), Sung Eun Choi (Associate Professor, Queens College), Yeon Bai (Professor, Montclair State University), and Yuen Mi Cheon (Postdoctoral Fellow, Fordham University). A total of 12 members were in attendance.

This year’s conference started with greetings of the new Chapter President Dr. HeaYeon Lee. In her greetings, Dr. Lee thanked the former Chapter President Dr. Bae for her accomplishments and services and emphasized

one of the missions of KWiSE New York/New Jersey Chapter to support one another for the pursuit of both personal and professional excellence and happiness. Next, a member introduction session was held in a roundtable setting. During this session, each member had a chance to introduce themselves to the group and share any updates about both their personal and professional lives. Topics covered a wide range of life experiences, including changes in work settings, professional achievements, academic interests, family transitions, immigration, marriage and children, just to name a few.

Then, the three speakers took turns to present on topics of their specialties. The first speaker was Dr. Mingzhu Fang, Assistant Professor in the Department of Environmental and Occupational Health at the School of Public Health, Rutgers, The State University of New Jersey. The title of her presentation was “Adverse Impact of Night- Shift Work and Light-at-Night on Breast Cancer Risk.” Various research methods and the roles of sleep, light and circadian rhythm were actively discussed amongst the members. The second speaker was Dr. Soyoun Lee, Associate Professor in the Department of Family Science and Human Development at Montclair State University. Dr. Lee’s presentation was an interactive session titled, “Reflective Discussion on Cultural Sensitivity as Human Services Professionals.” Through various activities, such as “community maps” and “the penny story,” the members had a chance to reflect on their biases, appreciate diversity and get to know one another at a deeper level. Bringing the prior two presentations — one on sleep and the other one on diversity — together, in the third presentation, Dr. Yuen Mi Cheon discussed on the topic of “Ethnic/Racial Disparities in Children’s Sleep: Possible Causes, Consequences, and Solutions.” During this talk, issues regarding diversity, ethnic/racial discrimination experiences, and how they may impact children and adolescents’ sleep were discussed along with innovative contemporary research methods to measure various aspects of sleep and

biomarkers.

The new and the old members varying in age and academic disciplines and levels of experience enthusiastically engaged in discussions and generated potential interdisciplinary research ideas. After the three presentations and discussions, all of the members took a group photo and went out for lunch. Conversations on both personal and professional lives as well as discussions on potential research ideas continued throughout lunch time and the following teatime. Upon the completion of the conference, one of the members remarked, “It was a great time spent with good people. I feel supported by the time we shared together during the conference.” A visiting undergraduate student from Korea also commented, “Thank you for making my time today so meaningful! It was an unforgettable experience!”



## 2019 KWiSE SE Conference Report

### 2019 KWiSE Southeast Chapter Annual Conference

May 18, 2019



The 9th Annual Conference of the KWiSE Southeast Chapter was held on Saturday, May 18, 2019 at the Gwinnett Convention and Visitors Bureau. Registration began at 9:30AM with coffee and snack provided. Dr. Mihyeon Jeon, the president of the KWiSE Southeast Chapter, welcomed everyone and briefly introduced the purpose of the KWiSE annual conference. She introduced Dr. Hey-Kyoung Lee, the president of the KWiSE Headquarter (Johns Hopkins University), who provided history and latest activities in chapters around the nation. Every attendee then had a chance to introduce themselves to the group before the program began in order to promote effective networking throughout the event.

As the program began, the Professor Hey-Kyoung Lee (Johns Hopkins University) came up again to provide a keynote speech focusing on her career and ongoing research, “My journey through Memory Lane: How Our Experience Shapes Our Brain.” In addition to demonstrating her experiments on how memories formed and how sensory experience shape our brain, she blended her personal experience and challenges on work-life balance as a working woman. As the first speaker of the research session, Professor Hyesung Park (Georgia Gwinnett College) provided her talk on “Information Technology Education – Adaptive Learning System.” She presented on how to engage undergraduate student in learning successfully by

adaptive learning systems with authentic real-life experience hands-on projects. Dr. Eunseon Ahn (Emory University) then presented on “Role of PD-1 during Effector CD8 T Cell Differentiation.” Based on her experiments with the spleens, livers, and lungs of mice, she discussed that PD-1 is needed for the generation of long-lived memory CD8 T cells.

The research session was recessed for a networking lunch and group photo time. The attendees gathered around based on their research/career interests and continued conversations during lunch. After lunch, Professor Young Rae Shim (Georgia Gwinnett College) continued research discussion on “Acculturation, Psychological Distress, and Cultural Adjustment Difficulties among Korean Americans.” She introduced the concept of “acculturation” in multiculturalism, women, and identity conflict among adolescents and emphasized importance of counseling to release stress. Professor Jeoung Soo Lee (Clemson University) then talked about “Multi-functional Polymeric Nanocarrier for Combinatorial Therapy of Bioactive Molecules.” She demonstrated the development of biomaterial-based drug/gene delivery system for site-specific of bioactive molecules designed to alleviate pathological conditions and promote functional tissue regeneration.

After the research session was concluded, Dr. Mihyeon Jeon briefly reviewed the KWiSE SE Chapter 2018-2019 activities. She presented a Certificate of Appreciation along with a small gift to the speakers and expressed gratitude to the committee members including Dr. Sohyun Park (CDC), Professor Hyesung Park (Georgia Gwinnett College), and Dr. Sung-Sil Moon (CDC). Dr. Jeon concluded the conference by presenting an Outstanding Leadership Award to the former president and senior advisor, Dr. Sung-Sil Moon, in recognition of her fine leadership and extraordinary dedication during her tenure as the president and the officers in



the preceding years. The conference was adjourned, and a group of attendees actively continued their networking and conversations at a local coffee shop. The KWiSE board members, the KWiSE Headquarter president, and a couple of speakers gathered again for a debriefing dinner and congratulated the successful event while continuing conversations on a diverse topic.

## 2019 KWiSE Texas Conference Report

### 4th Annual Regional Conference of Korean-American Women in Science and Engineering (KWiSE) Texas Chapter

May 11, 2019



The third annual KWiSE Texas Chapter annual conference was held on May 11, 2018 at the University of Texas Health Science Center Houston in Houston, Texas. About 35 people from institutions in and around Houston area including University of Texas Health Science Center Houston, Baylor College of Medicine, MD Anderson Cancer Center and University of Texas Medical Branch in Galveston, TX attended the meeting. At the opening of the conference, Dr. Seung-Hee Yoo, the current chapter president of KWiSE Texas gave welcomed everyone. Dr. Jun Goo of UT Health Science Center at Houston gave opening remark as the representative of the KSEA-South Texas Chapter, which is the major sponsor of the conference. This year, we also had a number of attendees from the Texas A&M located at College Station, TX and University of Texas Health Science Center at San Antonio. These

institutions are 2 to 3 hrs drive away from the location of the conference in Houston and evidence of the effort by the KWiSE Texas members these past years invested in outreach. We expect that our outreach effort will continue to grow to include a strong contingency from these two areas.

The conference began with the first scientific session of the day chaired by Dr. Soon Mi Lim of Texas A&M. Two invited speakers, Dr. Jiyoung Yoo, and Dr. Ohbet Cheon talked about “Oncolytic virus therapy for brain tumors”, and “Strategies to Reduce Hospital Readmission Rates”, respectively. This year, early-stage women faculty members in academic institutions were deliberately selected as the invited speakers in order to share their experience and philosophy toward the chosen career path in addition to their scientific interest. At the end of the first scientific session, each of the speakers were asked about the mentors they have had throughout their careers and gave brief and frank description of the help they have had from their mentors during graduate and postdoctoral work.

The second session of the conference was the keynote talk by Dr. Kyungsoon Chung who is the Professor, Department of Neuroscience, UTMB. Dr. Chung talked very frankly about the virtues that guided her throughout her career under the title “What does it mean being a woman scientist”. Dr. Chung emphasized that being prepared to take advantage of the fortunate chances that one encounter in life. She also shared her passion about the mother nature and her research focus about chronic pain. After a break for group photo and lunch with networking, the conference reconvened with the second scientific session.

During the second scientific session chaired by Dr. Yangjin Bae of Baylor College of Medicine, the invited speakers Dr. Betty Y.S. Kim of MD Anderson Cancer Center and Dr. Jihye Yun, Baylor College of Medicine gave talks with titles “Therapeutic phagocytosis modulation using innate immune checkpoints to enhance anti-tumor immunity.” and “High-dose vitamin C therapy to treat KRAS or BRAF mutant cancer cells.”, respectively.

The scientific session was followed by the poster session where 11 posters with the topics ranging from the RNA degradation pathway to the design of small molecules for the use in clinical studies were presented. Members were seriously engaged in discussing with the poster presenters and critiquing them by providing a platform to vote for the best poster presenter.

During the award session that followed the poster session, Dr. Juyeon Jo of Baylor College of Medicine 1st prize. All poster presenters were presented with a small token of appreciation.

Finally, the 4rd annual conference was a great success with the program consisting of not only scientific presentations but also other activities geared toward the professional development of the members. There were many with feedbacks that expressed



appreciation for these activities making the conference more interactive and even entertaining. We reflect positively on the success of these phenomenal of these past three years of KWiSE Texas where we went from non-existence to the solid presence in the region.

## Awards

### Dr. Jayoung Kim received 2019 KWiSE Outstanding Woman Scientist Award.

Aug. 15, 2019



Dr. Jayoung Kim (Cedars-Sinai Medical Center, UCLA) received the 2019 KWiSE Outstanding Woman Scientist Award. We honor her outstanding contributions to furthering the scientific discoveries with this award, and express our sincere appreciation of her devotion to KWiSE. Congratulations!



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**Chapter News**

**Greater DC Chapter news**

**NIH-DC chapter End of Year Party**

Dec. 14, 2018

NIH-DC Chapter held a joint Year End Dinner Event in partnership with KAPAL





**Los Angeles Chapter news**

**LA chapter End of Year Party**





**San Diego Chapter news**

**SD chapter End of Year Party**





New York/New Jersey Chapter news

## NY/NJ chapter End of Year Party



### *Why KWiSE?*

Most fields in Science, Technology, Engineering & Mathematics (STEM) have seen growth in women over the years, however, there are still problems.

- While the ratio of women in Biological Sciences and Mathematics is close to 50%, there is considerably lower proportion of women in higher level positions. This is called the “leaky pipeline” or the “glass ceiling” problem.
- In Physical Sciences, Computer/Information Technology, and Engineering, the ratio of women is only about a quarter, which indicates a severe problem of recruitment into those fields of study.
- The proportion of Asian-Americans in leadership positions in STEM related academia, government, and industry jobs is disproportionately low compared to other races. This is called the “bamboo ceiling” problem. In particular, Asian American Women show the lowest percentage in promotion in all STEM related jobs.

*KWiSE aims to help address & solve these issues.  
Together, we can make a difference!*



Announcement

## 2020 KWiSE Annual conferences

KWiSE Annual conferences will be held:

- West coast conference (LA-SD joint): May 2, 2020 (Sat)
- East coast conference (NIH-DC joint): May 2, 2020 (Sat)
- NJ/NY chapter conference: May 2, 2020 (Sat) - tentative
- Texas chapter conference: May 2020 - date to be determined
- Southeastern chapter conference: May 16, 2020 (Sat)

Please check each chapter website for updates & details.

## 2020 UKC (US-Korea Conference)

2020 UKC will be held on August 12-15, 2020 in Los Angeles.

Please check KSEA website ([www.ksea.org](http://www.ksea.org)) for updates & details.

## 2020 KWSE-KWiSE Virtual Seminar

KWiSE NIH chapter has partnered with KWSE (대한여성과학기술인회) to start a Virtual Seminar (Webinar) series. This venue is open to all KWiSE members. Log-in link and information will be distributed through each KWiSE chapters. We thank Dr. Dong-Yun Kim (KWiSE NIH chapter president) for spearheading this new initiative! Details of the Webinar will be posted on our website ([www.kwise.org](http://www.kwise.org)).



# 2020 여성과학자 (KWSE-KWiSE) Webinar

모시는글

'연결'과 '지능', 4차 산업혁명의 핵심입니다. 대한여성과학기술인회(KWSE)와 재미한인여성과학기술인협회(KWiSE)가 함께 학문의 열정을 나눌 수 있는 만남의 장을 준비하였습니다. 2020년 새로운 시작으로 Bio-Health 분야 여성 연구자들의 세미나가 온라인으로 진행됩니다. 어디에 계시든, 성별에 상관없이 누구나 참여하실 수 있으니, 접속하셔서 '융합'의 미래를 설계해보세요.

일시

매달 셋째주 한국 수요일(4월만 넷째주 수요일) / 미국 셋째주 화요일  
한국시간 기준(수요일) 오전 10:30 ~ 11:30 / 미국 동부기준 (화요일) 오후 8:30 ~ 9:30

온라인 참여방법

참여를 희망하시는 분은 주관자(정진영, [jjjeong@kribb.re.kr](mailto:jjjeong@kribb.re.kr))에게 사전에 메일로 참여희망을 알려주세요. 참여자들에게 세미나 당일 Webinar 10분 전에 메일로 접속코드(6자리 숫자)를 알려드립니다.



2020년 일정 (한국날짜 기준)

날짜	연사	소속	제목	분야
01/15			첫모임 (인사 및 소개) 한국: KWSE (박진아) KRIBB / (정진영) / KOSEN (윤정선) 미국: KWiSE (김동현) / NIH (전지현) / NIH fellowship (박혜영)	
02/12	이현주	KAIST	Miniature systems for ultrasound neuromodulation	Biosensors
03/18	이지현	NIAID/NIH	Multimodal imaging at Biosafety Level 4 Lab	Biomedical imaging
04/22	손영진	KRIBB	Stem cells and liver organoids	Organoid
05/13	이혜경	JHU	Cross-model recovery of adult brain plasticity	Neuroscience
06/17	김정애	KRIBB	Epigenetic regulations in human disease	Epigenetics
07/15	지영미	NIDCR/NIH	Small leucine-rich proteoglycans as driver of inflammation in salivary gland hypofunction	Functional Genomics
08/12	김미량	KRIBB	Epigenetic study of cancer and NAFLD (Non-Alcoholic Fatty Liver Disease)	Epigenomics
9/16	김민정	NIMH/NIH	Preclinical and first-in-human evolutions of novel radioligands for imaging COX-1 and COX-2	PET brain
10/14	이수현	KAIST	Emotional Modulation in Human Memory Encoding	Cognitive neuroscience
	신현정		Forces in cellular motions	Cell mechanics
11/18	홍소근	NHLB/NIH	Non-invasive in vivo tracking of iPSC-derived cardiomyocytes	Stem cells
12/16				

\*본 일정은 사정에 의해 일부 변경될 수 있습니다.



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## Florence Nightingale Day 2020

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This is a new STEM (Science, Technology, Engineering and Mathematics) outreach activity that KWiSE is planning in collaboration with ASA (American Statistical Association) and CWS (Caucus for Women in Statistics) to commemorate the 200<sup>th</sup> birth year of Florence Nightingale.

Florence Nightingale Day is a world-wide outreach event that is organized annually by ASA and CWS to educate middle- and high school students and their teachers on the opportunities for a career in statistics and data science. This year, KWiSE is planning to organize a day-long event in collaboration with ASA/CWS to invite local middle- and high school students (both male and female) around Los Angeles (West coast) and greater Washington DC area (East coast) to participate in this event. These are two areas highly populated by Korean-Americans, hence we expect to maximize the benefit to the Korean-American communities by having the event concurrently at these two locations. Such event fits in with the missions of KWiSE, one of which is to educate the next generation in STEM. Data science/statistics is an essential tool for any study in the STEM fields. Therefore, having such an event will allow the young Korean-American students to understand what data science/statistics is, and to generate interest in pursuing a future career in STEM.

This event is in the planning phase, and expected to be held in May 2020. If you are interested in helping out with this new initiative, please contact your local KWiSE chapter president.

Please check [www.kwise.org](http://www.kwise.org) for updates & details.