US-Korea Conference

Korean-American Scientists & Engineers Association (KSEA)

UKC 2026 Florida

From Imagination to Innovation
- Into Reality

REPORT

August 5-8, 2026
Omni Orlando Resort
https://ukc.ksea.org

Co-Organized with

The Korean Federation of Science and Technology Societies (KOFST)

The Korea-U.S. Science Cooperation Center / National Research Foundation of Korea (KUSCO / NRF)

Korean - American Scientists and Engineers Association (KSEA)

UKC 2026

US - Korea Conference (UKC) 2026

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The Korea-U.S. Science Cooperation Center National Research Foundation of Korea (KUSCO / NRF)

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UKC 2026 Organizers

Conference Chair / Co-chair

Yong Kyu Yoon	President of KSEA	UKC 2026 Chair
Oh Nam Kwon	President of KOFST	UKC 2026 Co-Chair

Program, Executive, and Workshops

Gloria J. Kim	University of Florida	Program Chair
Jin W. Choi	Michigan Tech	Program Co-Chair
David Kwon	KSEA	Executive Director, IT Director
Stella Kim	Cloudality	Finance Director
Ohbong Kwon	New York City College of Technology	Sponsorship Director 1
Jeongwon Park	University of Nevada, Reno	Sponsorship Director 2
Jinho Park	Eurofins BioPharma Product Testing	GD, Local Operation Director 1
Jae Um	Siemens Energy	Local Operation Director 2
Jun Ik Sohn	City of Apopka	Local Operation Director 3
Sung-Hoon Gee	Seagate Technology	Engagement Director
Hyun Dong Kim	Old Dominion University	External Relations Director, Web Director
Hyojoo Han	Georgia Gwinnett College	Poster & Session Chair
Juhyun Lee	University of Texas, Arlington	SEED Chair
Jeho Park	Claremont Mckenna College	IES Committee
Yongho Sohn	University of Central Florida	UKC Advisor
Hunter H. Kim	Osceola County Economic Development	Regional Relations Director
Euna Yoon	KSEA HQ	Director of Administration
Kelly Han	KSEA HQ	Financial Manager
Katie Park	KSEA HQ	IT/Web Director 2
Jahae Yun	KSEA HQ	Administrative Associate

About UKC 2026

Welcome to the 39th U.S.–Korea Conference on Science, Technology, and Entrepreneurship (UKC 2026), to be held August 5–8, 2026, in Orlando, Florida. Organized by the Korean-American Scientists and Engineers Association (KSEA) in celebration of its 55th anniversary, UKC 2026 brings together leaders from academia, industry, government, and research institutions to advance global collaboration and innovation.

Under the theme ***"From Imagination to Innovation – Into Reality"*** UKC 2026 will explore how scientific ideas and technological breakthroughs are transformed into real-world impact. Through plenary lectures, signature symposia, forums, and networking opportunities, the conference will highlight the critical roles of creativity, convergence, and collaboration in an era shaped by AI, data-driven science, and advanced technologies.

As KSEA's flagship conference, UKC serves as a premier platform for sharing cutting-edge research, fostering U.S.–Korea partnerships, and nurturing the next generation of science and engineering leaders. We look forward to welcoming you to an inspiring environment where ideas become innovation and collaboration shapes the future.

US-Korea Conference (UKC)

UKC provides an environment where convergence and innovation can be ignited and implemented. It can play a major role in the Creative Economy that requires interdisciplinary integration.

UKC can play a major role in reducing the technology gap with policy makers, and build the framework to tackle global challenges through science diplomacy.

UKC fosters peer networking and mentoring, and provides a platform for current and future leaders to meet in an environment where meaningful partnerships and friendships can form and grow.

UKC Communicates Science and Technology with the public, and cultivates Science, Technology, Engineering and Math (STEM) education to empower future generations.



재미한인과학기술자협회
KSEA
Korean-American Scientists and Engineers Association

KUSCO NRF
KOREA-U.S. SCIENCE COOPERATION CENTER
National Research Foundation of Korea

KOFST
Korean Federation of

https://ukc.ksea.org

UKC History

No.	Year	Dates	Venue	KSEA President
1	1974	7/28-8/8	Seoul, Korea	Inyong Ham
2	1976	7/26-8/6	Seoul, Korea	Chong Wha Pyun
3	1978	7/10-13	Seoul, Korea	Sang-il Choi
4	1980	7/14-19	Seoul, Korea	Kwang Bang Woo
5	1982	7/13-21	Seoul, Korea	Kyungsik Kang
6	1991	11/29-12/2	Arlington, VA	Moo Young Han
7	1994	9/22-26	Alexandria, VA	Moon Won Suh
8	1995	8/31-9/4	San Francisco, CA	Dewey Doo-Young Ryu
9	1997	2/21-24	McLean, VA	Saeyoung Ahn
10	1998	4/23-25	Chicago, IL	Kyong Chul Chun
11	1998	10/22-24	Vienna, VA	Ki Dong Lee
12	1999	8/12-14	Los Angeles, CA	Hong Taik (Thomas) Hahn
13	2000	9/2-5	Chicago, IL	Howard Ho Chung
14	2001	8/10-12	Cambridge, MA	Nak Ho Sung
15	2002	7/8-11	Seoul, Korea	Chan Il Chung
16	2003	8/7-9	Caltech, CA	Quiesup Kim
17	2004	8/12-14	RTP, NC	Sung Won Lee
18	2005	8/11-13	Irvine, CA	Kwang-Hae (Kane) Kim
19	2006	8/10-13	Teaneck, NJ	Sung K. Kang
20	2007	8/9-12	Reston, VA	Kang-Won Wayne Lee
21	2008	8/14-17	San Diego, CA	Kang-Wook Lee
22	2009	7/16-19	Raleigh, NC	Chueng-Ryong Ji
23	2010	8/11-15	Seattle, WA	Jae Hoon Kim
24	2011	8/10-14	Park City, UT	Hosin David Lee
25	2012	8/8-11	Los Angeles, CA	Hyungmin Michael Chung
26	2013	8/7-10	New York, NY	Myung Jong Lee
27	2014	8/6-9	San Francisco, CA	Kookjoon Ahn
28	2015	7/29-8/1	Atlanta, GA	Youngsoo Richard Kim
29	2016	8/10-13	Dallas, TX	Jaehoon Yu
30	2017	8/9-12	Washington, DC	Eun-Suk Seo
31	2018	8/1-4	New York, NY	K. Stephen Suh
32	2019	8/14-17	Chicago, IL	Jun-Seok Oh
33	2020	12/14-17	Virtual	Soolyeon Cho
34	2021	12/15-18	Los Angeles, CA	Byungkyu Brian Park
35	2022	8/17-20	Washington D.C.	Young-Kee Kim
36	2023	8/2-5	Dallas, Texas	Yongho Sohn
37	2024	8/21-24	San Francisco, CA	Tae (Tom) Oh
38	2025	8/5-9	Atlanta, GA	Jae Hyeon Ryu

* Note the moratorium practiced in the 4th meeting, 1980.

Opening Remarks from UKC 2026 Chair



Yong Kyu "YK" Yoon

UKC 2026 Chair
President of KSEA
Professor in Electrical and
Computer Engineering,
the University of Florida

Dear KSEA Members, Distinguished Guests, Colleagues, and Friends,

On behalf of the Korean-American Scientists and Engineers Association (KSEA), it is my great honor to welcome you to the 39th U.S.–Korea Conference on Science, Technology, and Entrepreneurship (UKC 2026), held in Orlando, Florida, from August 5–8, 2026.

Since its founding in 1971, KSEA has grown into the largest Korean-American scientific and engineering organization in the United States, connecting researchers, engineers, entrepreneurs, educators, students, and leaders while advancing science, technology, and innovation and strengthening the U.S.–Korea partnership.

Together with our co-hosts, the Korean Federation of Science and Technology Societies (KOFST) and the Korea–U.S. Science Cooperation Center/National Research Foundation of Korea (KUSCO/NRF), we are delighted to welcome more than 1,000 participants from academia, industry, government, national laboratories, and research institutions.

The theme of UKC 2026, "***From Imagination to Innovation – Into Reality***," reflects our shared belief that bold ideas become transformative innovations through creativity, collaboration, and perseverance.

UKC 2026 features world-class plenary speakers, Signature Symposia in AI, Space, and Semiconductors, technical symposia, leadership and policy forums, entrepreneurship programs, sponsor forums, career development activities, and extensive networking opportunities. More importantly, it is a place where new collaborations begin, lasting friendships are built, and future leaders are inspired.

Supporting the next generation remains one of KSEA's highest priorities. Through programs such as Scientists and Engineers Early Career Development (SEED), Fostering Innovation in Rising Experts (FIRE), and the Innovation & Entrepreneurship Symposium (IES), we aim to empower students and early-career professionals to develop their careers while expanding their global perspectives and professional networks.

This year, we have also introduced several new initiatives, including organizing our 16 Clustered Technical Groups into integrated technical symposia and launching an Entertainment Technology track to reflect the growing impact of digital media, immersive technologies, and AI on education, communication, and knowledge sharing.

My administration is guided by the 4Cs—Communication, Collaboration, Community, and Creativity. These values remind us that scientific excellence is achieved not only through individual accomplishments but also through open dialogue, trusted partnerships, and a vibrant community.

I extend my sincere gratitude to our organizing committee, volunteers, sponsors, speakers, exhibitors, and participants whose dedication has made UKC 2026 possible.

I hope this conference sparks new ideas, meaningful collaborations, and lifelong friendships. Thank you for joining us in Orlando, and welcome to UKC 2026.



Yong Kyu "YK" Yoon
55th President

Welcoming Remarks from KOFST



Oh Nam Kwon

President of the Korean Federation of Science and Technology Societies (KOFST)

Distinguished scientists and engineers from Korea and the United States, and honored guests, It is my great privilege to welcome you to the 2026 US-Korea Conference on Science, Technology and Entrepreneurship (UKC-2026).

Allow me to express my heartfelt gratitude to President Yong Kyu Yoon and all the members and organizers of the Korean-American Scientists and Engineers Association (KSEA), whose dedication has made this conference possible. I offer KSEA my warmest
congratulations on its 55th anniversary this year; for more than half a century it has stood at the very center of scientific and technological exchange between Korea and the United States, and I hold its devotion in the highest regard.

Held each year to advance exchange and cooperation among Korean and American experts in science and technology, UKC reaches its 39th edition this year. It has become a leading international forum where the scientists and engineers of both nations gather to share knowledge and experience and to chart the future course of collaboration.

That UKC has come this far is owed to all of you — the more than one thousand participants who bring this gathering to life each year. Orlando, our host city, is a place where imagination and daring live side by side. Disney World, which has shaped humanity's dreams into reality, and the Kennedy Space Center, which launched those dreams into space, stand together beside this one city.

A place that reveals, at a single glance, the whole path from imagination to reality, Orlando is the perfect stage for this year's theme. The theme of this year's conference is "***From Imagination to Innovation — Into Reality***."

Einstein once said, "***Imagination is more important than knowledge. Knowledge is limited. Imagination encircles the world***." The world is not something already finished; it lies open with possibilities not yet drawn. Imagination is the power to picture, ahead of its time, what has not yet come. Every advance in science and technology has begun with those who first imagined and drew out the latent, not-yet-realized possibilities of the world — which is how things once thought impossible have become innovations, and at last realities that change our lives.

At this very moment, across artificial intelligence, semiconductors, biotechnology, quantum technology, and aerospace, those possibilities are crossing over into reality. Yet imagination alone does not become reality.

On the eve of humanity's journey to the Moon, President Kennedy declared, "***We choose to go to the Moon ... not because they are easy, but because they are hard***," and that audacious dream became reality right here, at the Kennedy Space Center on the coast of Florida.

The power to draw what is not yet into reality has always lain in the courage to take, willingly, the hardest road. And that courage needs a direction.

In recent interviews I have stressed that in an age of AI, science must take up all the more clearly its role of asking "***why.***" The more AI quickens the speed and efficiency of research, the more deeply we must ask where our technology ought to be headed, and why a given problem is worth solving. Imagination draws what is not yet; courage walks the road; and the question "***why***" sets its direction.

This year also marks the 60th anniversary of the Korean Federation of Science and Technology Societies (KOFST). KOFST has adopted "***Innovation through Resonance***" as its new vision as it prepares for the next sixty years. We believe greater innovation becomes possible when the capabilities and voices of scientists and engineers resonate together across different fields, generations, and nations.

UKC is precisely such a place of connection and resonance between the scientists and engineers of Korea and the United States — a place where our shared journey, choosing to go far together rather than fast alone, carries on. May UKC-2026 be more than an occasion for academic exchange: may it be a place where the scientists and engineers of Korea and the United States stand together, for the sake of future generations, before the hardest questions.

Here in Orlando, where imagination and reality meet in a single city, I trust that the insights and bonds you share will become the force that draws what is not yet into reality.

Thank you.

Welcoming Remarks from KUSCO/NRF President



Won-Hwa Hong

President of Korea-U.S. Science Cooperation Center

President of National Research Foundation of Korea

Distinguished Guests,

It is my great pleasure to welcome you to the 2026 US–Korea Conference on Science, Technology, and Entrepreneurship.

I would like to extend my heartfelt congratulations on the convening of UKC 2026 in Florida — an occasion that, year after year, bridges the scientific and technological communities of Korea and the United States, reaffirming our deep mutual trust, enduring partnership, and shared vision for a brighter future.

This year holds special significance, as the Korean-American Scientists and Engineers Association (KSEA) celebrates its 55th anniversary. As we mark the 39th UKC, I wish to express my profound appreciation to KSEA for its unwavering dedication and tireless efforts over the decades — serving as a vital bridge between researchers of both nations, fostering meaningful networks, and strengthening research partnerships.

As we move from 2025 into 2026, science and technology once again find themselves at the crest of a transformative wave. Artificial intelligence has not only become woven into the fabric of everyday life, but is now driving an entirely new paradigm of scientific discovery.

In this context, the United States has officially launched the Genesis Mission to accelerate AI-driven scientific research, while Korea has embarked on the K-Moonshot Program — an initiative to harness the convergence of AI and S&T in addressing national strategic challenges and leading innovation. I deeply realize that we are living in a time when fundamental changes in the research environment have already begun.

Against this backdrop, expectations for UKC 2026, which will be held under the theme "***From Imagination to Innovation—Into Reality***", are higher than ever. This conference will explore how scientific ideas and technological breakthroughs translate into real-world impact, and will illuminate the critical roles of creativity, convergence, and collaboration in an era shaped by AI, data-driven science, and advanced technology.

In October 2025, Korea and the United States signed a Memorandum of Understanding on Technological Prosperity, expanding our bilateral research partnership into key strategic domains including artificial intelligence, quantum technologies, biotechnology, and space. The strategic partnership will enable the alliance between the two countries to be much stronger.

I firmly believe that addressing the complex and pressing challenges facing our world today requires close cross-border cooperation, and above all, collaboration among our scientists and engineers is essential.

In this spirit, the National Research Foundation of Korea (NRF) is fully committed to expanding opportunities for researcher exchanges, joint research, and other scientific activities within the framework of bilateral/multilateral cooperation between Korea and the United States. We will continue to build close partnerships that transcend national boundaries and maintain flexible frameworks for research collaboration.

I am confident that UKC 2026 will once again yield valuable insights and proposals that help shape the future direction of Korea-US science and technology cooperation. The NRF will remain steadfast in its support, ensuring that researchers from both nations can engage in open dialogue and drive innovation together.

In closing, I wish to express my deepest gratitude to Professor Yong Kyu Yoon, President of KSEA, Professor Oh Nam Kwon, President of Korean Federation of Science and Technology Societies (KOFST), and all those who have worked tirelessly to make this year's UKC a great success.

I wish you all good health and prosperity.

Thank you very much.

August 2026

Won-Hwa Hong

President, Korea-US Science Cooperation Center
President, National Research Foundation of Korea

Welcoming Remarks from UKC 2026 Program Chair



Gloria J. Kim

UKC 2026 Program Chair

Dear Participants of UKC 2026,

It is my great honor to welcome you to the 39th U.S.-Korea Conference on Science, Technology, and Entrepreneurship (UKC 2026).

For nearly 40 years, UKC has served as a premier forum where scientists, engineers, entrepreneurs, educators, and policymakers from the United States and Korea come together to exchange ideas, foster collaboration, and build lasting partnerships. This year's theme, "***From Imagination to Innovation – Into Reality***," celebrates the journey from bold ideas to transformative discoveries and real-world impact. It reflects our shared commitment to advancing science and technology that benefits society through creativity, collaboration, and innovation.

We are delighted to host UKC 2026 in Orlando, Florida, a city recognized not only as a world-renowned destination but also as a growing center for aerospace, simulation, advanced technologies, and entrepreneurship. With its proximity to Florida's Space Coast and vibrant innovation ecosystem, Orlando provides an ideal setting for exploring new frontiers in science and technology while strengthening U.S.–Korea collaboration.

This year's program features an outstanding lineup of Plenary Sessions, Technical Group Symposia, Signature Symposia, Sponsor and KSEA Forums, and special programs including SEED (Science and Engineering Early Career Development), FIRE (Fostering Innovation in Rising Experts), and the Innovation & Entrepreneurship Symposium (IES). The Poster Session will showcase cutting-edge research from students, postdoctoral researchers, and professionals, creating valuable opportunities to exchange ideas and build new collaborations.

I extend my sincere appreciation to our co-organizing societies, sponsors, organizing committee, technical group leaders, KSEA staff, and dedicated volunteers whose hard work and commitment have made UKC 2026 possible.

It is a privilege to welcome all of you to UKC 2026. I hope this conference inspires new ideas, meaningful collaborations, and lasting friendships. May your time in Orlando be intellectually rewarding, professionally enriching, and personally memorable.

Thank you for being part of UKC 2026, and I wish you a productive and inspiring conference.

Warmest regards,

Gloria J. Kim

Assistant Professor, Department of Engineering Education
Affiliate Faculty, Department of Electrical and Computer Engineering
Herbert Wertheim College of Engineering, University of Florida

Congratulatory Remarks

August 6, 2026



YOUNG KIM
40TH DISTRICT, CALIFORNIA

COMMITTEE ON FINANCIAL SERVICES
SUBCOMMITTEE ON FINANCIAL INSTITUTIONS AND MONETARY POLICY
SUBCOMMITTEE ON NATIONAL SECURITY, ILLICIT FINANCE, AND INTERNATIONAL FINANCIAL INSTITUTIONS

COMMITTEE ON FOREIGN AFFAIRS
SUBCOMMITTEE ON EAST ASIA AND THE PACIFIC
SUBCOMMITTEE ON EUROPE

HOUSE SELECT COMMITTEE ON STRATEGIC COMPETITION BETWEEN THE UNITED STATES AND CHINESE COMMUNIST PARTY

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Young Kim

Member of Congress,
40th District, California

Dear Friends:

I want to welcome everyone to the 39th U.S.–Korea Conference on Science, Technology, and Entrepreneurship. Thank you to the Korean-American Scientists and Engineers Association (KSEA) for bringing together scientists, engineers, entrepreneurs, policymakers, and industry leaders from both the United States and Korea.

With this year's theme of "***From Imagination to Innovation– Into Reality***", I know you will be exploring how to turn scientific ideas and technological breakthroughs into real world impacts.

I trust that this conference will be a productive forum of sharing cutting-edge research, fostering stronger U.S.–Korea partnerships, and nurturing the next generation of science and engineering leaders.

It is an honor to serve you in the United States Congress, and I look forward to working with you to serve our community. Once again, congratulations and best wishes for a successful event.

Sincerely,

Young Kim
Member of Congress, 40th District

Congratulatory Remarks

Consul General
of the Republic of Korea
Atlanta, Georgia

August 6, 2026



Joon Ho Lee

Consul General of the Republic of Korea in Atlanta

To all who have gathered to participate in the 2026 U.S.-Korea Conference on Science, Technology, and Entrepreneurship (UKC), congratulations on the opening of UKC 2026.

Now in its 39th year, UKC has grown into one of the premier forums for Korean-American scientists and engineers, as well as leading researchers from both Korea and the United States. It is a place where the defining scientific challenges of our time are explored, ideas are exchanged, and bridges are built across generations, disciplines, and borders. It brings together senior and emerging leaders in science and engineering, while fostering closer collaboration among academia, industry, and government.

As the United States commemorates the 250th anniversary of its independence this year, it is especially fitting that the Korean-American Scientists and Engineers Association (KSEA) celebrates its 55th anniversary—a milestone of steadfast commitment to advancing Korea-U.S. cooperation in science and technology. The phrase our two governments use to describe our relationship—a "***future-oriented comprehensive strategic alliance***"-finds one of its clearest expressions in gatherings like UKC, where partnerships are strengthened, innovation is advanced, and the future of our alliance is shaped.

This year's theme, "***From Imagination to Innovation - Into Reality,***" is especially meaningful as artificial intelligence continues to transform our world at an extraordinary pace. Even in the age of AI, imagination remains uniquely human—and so does the determination to turn imagination into reality. I hope you will challenge and inspire one another, forge new partnerships, and together transform today's imagination into tomorrow's innovation, creating solutions that contribute to peace, prosperity, and the well-being of people around the world.

Once again, congratulations on the opening of UKC 2026. I wish you a productive and inspiring conference, and continued progress in strengthening the scientific partnership between Korea and the United States.

Sincerely,

Joon Ho Lee
Consul General of the Republic of Korea in Atlanta

Congratulatory Remarks



Alexander N. Cartwright

President of University of Central Florida

On behalf of the University of Central Florida, it is my pleasure to welcome you to Central Florida for the 2026 U.S.–Korea Conference on Science, Technology, and Entrepreneurship.

This conference brings together researchers, entrepreneurs, industry leaders, and students who share a common belief: that the world's most important challenges are best addressed through collaboration, discovery, and the exchange of ideas.

For decades, the partnership between the United States and the Republic of Korea has advanced scientific discovery, strengthened technological innovation, and created opportunities that extend far beyond our two nations. Universities have helped sustain that progress by educating talent, advancing research, and bringing people together around shared challenges. This conference continues that tradition by fostering new relationships, encouraging interdisciplinary collaboration, and inspiring the next generation of innovators.

I extend my sincere appreciation to the conference organizers, volunteers, sponsors, and participants whose commitment makes this gathering possible. Your work reflects the spirit of curiosity, partnership, and shared purpose that drives progress.

I hope your time in Central Florida is productive, inspiring, and filled with meaningful conversations that lead to new ideas and lasting collaborations.

Welcome, and congratulations on successful UKC 2026.

Alexander N. Cartwright
President
University of Central Florida

Plenary Speakers



William D. Phillips

Nobel Laureate in Physics

NIST Fellow and Distinguished University Professor

Dr. William D. Phillips is a Nobel Prize-winning physicist and NIST Fellow at the U.S. National Institute of Standards and Technology (NIST), as well as a Distinguished University Professor of Physics at the University of Maryland. He was awarded the 1997 Nobel Prize in Physics for the development of methods to cool and trap atoms using laser light, a breakthrough that transformed modern atomic physics and quantum science.

Dr. Phillips founded NIST's Laser Cooling and Trapping Group and pioneered techniques that have become fundamental to cold-atom research worldwide. His work has contributed to advances in quantum technologies, precision measurement, and atomic clocks, which serve as the foundation of global timekeeping systems.

Through his scientific discoveries, education, and public engagement, Dr. Phillips continues to inspire new generations of scientists while advancing the frontiers of quantum physics.

A New Measure: the Quantum Reform of the Modern Metric System

The metric system, officially the "***International System of Units***", has its roots in the French revolution. Today we have experienced the greatest revolution in measurement since the French revolution. The quantum nature of sub-microscopic atomic matter now provides new definitions of the kilogram, ampere, kelvin, and mole. These quantities are defined by fixing values for the most fundamental quantum constant, Planck's constant; the quantum of electric charge; Boltzmann's constant; and Avogadro's number. I will explain how this is possible, why it was necessary, and speculate about future changes in the SI that may take advantage of features of the Second Quantum Revolution.

Plenary Speakers



Chris A. Malachowsky

Co-Founder and Fellow,
NVIDIA

Chris Malachowsky founded NVIDIA in 1993 and has more than 30 years of industry experience. He serves as a member of the executive staff and a senior technology executive for the company.

Malachowsky has been instrumental in managing, defining and driving the company's core technologies as it has grown from a startup to the global leader in visual and parallel computing. As an executive at NVIDIA, he has led numerous functions, including IT, operations and all facets of the company's product engineering. Most recently, he was responsible for NVIDIA's world-class research organization, which is chartered with developing the strategic technologies that will help drive the company's future growth and success. Prior to NVIDIA, Malachowsky held engineering and technical leadership positions at HP and Sun Microsystems. A recognized authority on integrated-circuit design and methodology, he has authored close to 40 patents. He holds a BSEE degree from the University of Florida and an MSCS degree from Santa Clara University. Both schools have honored Malachowsky with Distinguished Alumnus awards.

Malachowsky serves on the boards of the Computer History Museum and Hiller Aviation Museum, in Silicon Valley, and the Los Angeles County Museum of Art's Art & Technology Lab. Beyond his technical accomplishments, Malachowsky has also received an Emmy for a film he helped produce that won Best Documentary in 2009.

Expanding Access, Building the Future

AI FOR GOOD
AI is a foundational shift, not just another tool — as consequential as electricity, as transformative as the internet; we are still in the earliest innings What happens to this country if most Americans never get a real chance to participate in the AI era?

The UF experiment as proof of concept – every department, every discipline, not just technical majors had AI across every curriculum Scaling the model: the "***New Frontier***" 50-State Compute Initiative AI's potential in science at the intersection of disciplines — AI + medicine, climate science, materials science; breakthroughs will come from interdisciplinary convergence, and universities are where that happens

GOOD FOR AI
AI as a once-in-a-generation chance to rebuild and expand opportunity, not just for the privileged few Good AI doesn't happen by accident — it requires the right people, structures, and commitments Industry + Government + Academia working together (SCSP Taskforce on the Future of Work; state AI institutes; university partnerships) Diverse, global talent is what makes AI good — the AI era will fail if it only draws from a narrow slice of humanity Korean-American scientists and engineers represent exactly the cross-disciplinary, globally-connected profile the field needs Korea's indispensable role in AI infrastructure — HBM memory, advanced semiconductor packaging; US-Korea R&D collaboration is not peripheral, it's load-bearing What "good" means for AI policy: accessible, equitable, shaped by people who understand both the technology and its human implications

The Question Worth Asking
What happens when everyone has the tools to think bigger, build faster, and solve problems we used to think were out of reach? That's the actual race. You don't win it by restricting access — you win it by expanding it The next breakthroughs will come from rooms like this one Call to action: be the builders, the bridges, the curious ones — there's more to build, more states to reach, more students to empower

Plenary Speakers



Ji-Hyun Lee

Professor, Department of Biostatistics, University of Florida;

Associate Director and Division Director for Cancer Quantitative Sciences, University of Florida Health Cancer Institute

Dr. Ji-Hyun Lee is a cancer biostatistician whose research focuses on clinical trials, cancer prevention and treatment, immunotherapy, artificial intelligence, and the analysis of large-scale health data. She has authored more than 210 peer-reviewed publications and provides statistical leadership for numerous federally funded cancer research projects.

In 2025, Dr. Lee served as the 120th President of the American Statistical Association, becoming the first Korean-American and first East Asian to hold the position in the organization's history. She also established the first Statistical Advisory Panel at Nature Medicine to strengthen methodological rigor and reproducibility in biomedical research.

Through her research, leadership, and mentoring, Dr. Lee advances the role of statistics and data science in improving human health and supporting evidence-based decision making.

Food, Medicine, and Belief: Scientific Evidence in the Age of Uncertainty

As a biostatistician working in cancer research, I have spent much of my career studying how evidence shapes medical decisions when the stakes are high. In this talk, I will share examples from my own research to illustrate how modern science navigates uncertainty, belief, hope, and rapidly evolving data. I will discuss a randomized clinical trial evaluating neutropenic diets in patients with blood cancer, observational studies examining ivermectin and cancer outcomes using large-scale electronic health records, and ongoing work on mRNA-based cancer vaccines and immunotherapy. I will also reflect on how data science, AI, and large-scale health data are creating new opportunities (and new challenges) for generating and interpreting medical evidence. As scientific information becomes easier to produce, questions about causation, uncertainty, and human judgment may become even more important. Ultimately, the goal of science is not simply to generate more data, but to help people understand what the evidence truly shows.

2026 KSEA Awards



Eun-Suk Seo

Professor
University of Maryland
College Park, MD

Outstanding Contribution to KSEA Award (presented by KSEA and MSIT)

Dr. Eun-Suk Seo is a Professor at the University of Maryland, College Park, MD. She obtained her B.S. and M.S. in Physics from Korea University in 1984 and 1986, respectively. She subsequently earned her Ph.D. in Physics from Louisiana State University, Baton Rouge, LA, in 1991.

Dr. Seo has established a legacy of research leadership and field-defining contributions. She has authored approximately 200 peer-reviewed journal articles and more than 300 conference proceedings papers, amassing over 26,000 citations with an h-index of 67. Demonstrating sustained international recognition, she has delivered 213 invited talks worldwide, which includes twelve in the year 2025 alone. Her cumulative research funding exceeds $30 million. Through this robust funding, over 100 students have been trained in her laboratory, extending the intellectual reach of her program as many now contribute to academia, national laboratories, and industry.

Throughout her distinguished career, Dr. Seo has received numerous prestigious accolades. She was the recipient of the Presidential Early Career Award for Scientists and Engineers from the White House in 1997. She received the NASA Group Achievement Award from the National Aeronautics and Space Administration in both 2006 and 2011. In 2008, the National Science Foundation awarded her the Antarctica Service Medal of the United States of America. She was elected as an American Physical Society Fellow in 2010. Additionally, she was honored with the Scientist of the Year Award by KSEA and KOFST in 2015 and was named the Korean-American Day Honoree by the Korea Economic Institute in Washington DC in 2017.

Dr. Seo's contributions to the KSEA represent some of her most noteworthy achievements. Her extensive leadership across major scientific associations includes her involvement in the Korean-American Aerospace Science and Technology Association (KASSTA). She has dedicated significant service as the 46th President of the Korean-American Scientists and Engineers Association (KSEA) , the 4th President of Korean-American Women in Science and Engineering (KWiSE), and the 29th President of the Association of Korean Physicists in America (AKPA). Furthermore, she holds a position on the Board of Directors of the Korea–U.S. Science Cooperation Center (KUSCO).

2026 KSEA Awards



Ji-Hyun Lee

Professor, Department of Biostatistics, University of Florida;

Associate Director and Division Director for Cancer Quantitative Sciences, University of Florida Health Cancer Institute

Scientist of the Year Award (presented jointly by KSEA and KOFST)

Dr. Ji-Hyun Lee is a distinguished biostatistician whose career has strengthened the role of statistics in biomedical science and expanded the visibility of Korean-American scientists in international scientific leadership.

In 2025, Dr. Lee served as the 120th President of the American Statistical Association (ASA), the world's largest statistical society, founded in 1839. She became the first Korean-American and first East Asian to hold this office in the organization's history. In this role, she championed the importance of statistical science in addressing societal and biomedical challenges. She previously served as President of the Caucus for Women in Statistics and Data Science, reflecting her commitment to mentorship, inclusion, and service.

Dr. Lee has authored more than 210 peer-reviewed publications in leading journals, including Nature, Cell, and the Journal of Clinical Oncology. She is co-first author of a Phase III randomized clinical trial that influenced clinical perspectives on dietary management in immunocompromised cancer patients. She has also contributed to studies demonstrating that mRNA COVID-19 vaccines can enhance anti-tumor immune responses, advancing next-generation cancer immunotherapy. In addition, she is a co-inventor of an emerging machine learning approach that uses brain imaging patterns to predict tumor characteristics and improve the identification of pseudoprogression, advancing efforts toward non-invasive cancer characterization. She currently contributes statistical leadership to multiple NIH-, NCI-, and PCORI-funded cancer research projects as lead biostatistician, core director, and co-investigator.

Dr. Lee established the first statistical advisory panel at Nature Medicine, bringing together 57 statisticians to strengthen rigor and reproducibility in biomedical research. She also initiated the ASA Clinical Trials Certification Program to bridge the gap between statistical education and clinical research practice.

Dr. Lee is a dedicated mentor and educator. She has mentored numerous graduate students and early-career scientists and co-authored 궁금하면 과학이야, a book written to encourage young Korean women to pursue STEM careers.

Dr. Ji-Hyun Lee exemplifies scientific excellence, leadership, and service to the broader scientific community. Through her scholarship, mentorship, and international leadership, she has helped expand the visibility of Korean-American scientists while supporting and inspiring future generations of researchers.

2026 KSEA Awards



Young-Shin Jun

Anna McKelvey Professor
McKelvey School of Engineering
at Washington University

Engineer of the Year Award (presented by KSEA and KOFST)

Dr. Young-Shin Jun is Professor of Energy, Environmental & Chemical Engineering at Washington University in St. Louis (WashU). She earned her B.S. and M.S. in Environmental Science and Engineering from Ewha Womans University, and her S.M. and Ph.D. from Harvard University. After postdoctoral research at the University of California-Berkeley/Lawrence Berkeley National Laboratory, she joined WashU in 2008 and was promoted early to both Associate and Full Professor.

Dr. Jun is recognized for her pioneering contributions to mineral nucleation and water-solid interfacial processes, translating nanoscale phenomena into scalable, sustainable technologies for water, energy, and resource recovery. A highly influential leader bridging the scientific communities of the United States and South Korea, she chaired the symposium "***Achieving Carbon Neutrality***" at the 2023 US-Korea Conference (UKC) in Dallas. Since 2013, she has served as the McDonnell International Scholars Academy Ambassador to Seoul National University and has fostered educational and research collaborations with leading Korean universities and research institutions.

Dr. Jun is a globally recognized leader in environmental and chemical engineering. Her innovations in three major thrusts—energy-related CO_2 systems, critical mineral recovery for a circular economy, and advanced nanomaterials for clean water—are transforming how society stores carbon, secures critical elements, and delivers safe drinking water. Her research advances CO_2 capture, utilization, and storage and CO_2-enabled energy systems. She has developed several patented technologies for recovering critical minerals and nutrients from unconventional resources, along with photothermal membrane systems for clean water production.

Dr. Jun's scholarly impact is demonstrated by 159 peer reviewed publications and four granted patents. She has received numerous honors, including the 2011 U.S. NSF CAREER Award, the 2020 James Lee Award, and the 2025 IUPAC Distinguished Women in Chemistry or Chemical Engineering Award. She was named a 2015 Kavli Fellow by the U.S. National Academy of Sciences, a 2016 Frontiers of Engineering Fellow by the U.S. National Academy of Engineering, a 2018 Fellow of the Royal Society of Chemistry, a 2019 Fellow of the American Chemical Society (ACS), and a 2024 Fellow of the American Association for the Advancement of Science. As chair of the ACS Committee on Science, she identifies and advances the frontiers of chemical science. She has mentored 119 students and supported K-12 STEM education since 2008.

2026 KSEA Awards



John Jungwoo Ha

Founder & Chief Executive Officer
Bear Robotics, Inc.

Entrepreneur of the Year Award (presented by KSEA and Maeil Business Newspaper)

Dr. John Jungwoo Ha is the Co-Founder and Chief Executive Officer of Bear Robotics, a global Physical AI company building full-stack autonomous robotics platforms that enable intelligent automation across hospitality, healthcare, logistics, manufacturing, and other commercial and industrial environments. Under his leadership, Bear Robotics has evolved beyond a service robotics company into a robotics platform company, integrating AI software, autonomous mobility, fleet management, cloud infrastructure, and operational intelligence to power the next generation of Physical AI applications.

Dr. Ha earned his bachelor's degree in Computer Science from Seoul National University and his Ph.D. in Computer Science from The University of Texas at Austin. Prior to founding Bear Robotics, he held engineering and research roles at technology startups and served as a Research Scientist at Intel and a Technical Lead at Google. He also gained firsthand experience operating a restaurant, providing unique insight into frontline operational challenges and shaping his vision for practical robotics solutions. In addition, he served as an Adjunct Professor at KAIST, helping bridge academic research and industry innovation.

Since co-founding Bear Robotics in 2017, Dr. Ha has led the company's growth into one of the world's largest deployed Physical AI and autonomous robotics platforms. Bear Robotics develops both robotic hardware and AI-driven software infrastructure, creating a full-stack ecosystem that enables robots to operate, learn, and collaborate effectively in dynamic real-world environments. Unlike many robotics companies focused primarily on prototypes or limited deployments, Bear Robotics operates at scale, with more than 15,000 robots deployed globally across thousands of customer locations. Today, the company's technology is deployed in more than 20 countries and 46 U.S. states, supporting mission-critical workflows across hospitality, healthcare, retail, logistics, and industrial sectors.

Dr. Ha has published numerous research papers in artificial intelligence, machine learning, and computer systems, and his leadership has helped earn global recognition for Bear Robotics, including the iF Design Award, International Design Awards (IDA), Kitchen Innovation Award, and Hospitality Innovation Planet (HIP) Award.

As a pioneer in Physical AI, he is focused on bridging the gap between AI breakthroughs and large-scale commercial adoption, building the infrastructure that enables intelligent robots to become an integral part of the future workforce.

2026 KSEA Awards



Sung-Sil Moon

Senior Research Microbiologist, CDC
President, KWiSE

Outstanding Community Service Award

Dr. Sung-Sil Moon is a scientist, mentor, and community builder whose seventeen years of sustained service to KSEA represent the very spirit of excellence. While maintaining a distinguished research career at the Centers for Disease Control and Prevention (CDC), she has dedicated herself to building institutions and advancing women in STEM—from young students in Atlanta to postdoctoral researchers across two continents.

As a Senior Research Microbiologist at the CDC, Dr. Moon leads critical vaccine development for rotavirus and has contributed significantly to global emergency responses for COVID-19, Ebola, and Monkeypox. Her professional credibility, recognized by honors such as the CDC Honor Award and the NCIRD Director's Award for Innovation, serves as the foundation for her influential community leadership.

As President of KWiSE Headquarters, Dr. Moon strengthened national networks and established enduring pathways for female scientists. Under her leadership, KWiSE launched the Young Scientist Scholarship and the Outstanding Woman Scientist Award. She has also been the driving force behind the Women in STEM Forum at the U.S.–Korea Conference (UKC), elevating it into a flagship program. In 2025, her role as UKC Poster Director further demonstrated her commitment to supporting early-career researchers with professional care.

Her impact on mentorship is perhaps most evident in the KWiSE–WISET Global Mentoring Program, which in 2025 served 168 mentees. Through structured curricula in career and leadership development, Dr. Moon has provided guidance that many credit as pivotal to their professional trajectories.

Since 2008, Dr. Moon has also been a cornerstone of the KSEA Georgia Chapter. She established a dedicated KWiSE Award for top-performing female students in the KSEA Math Competition, encouraging young girls in the Atlanta region to pursue STEM with confidence. Furthermore, as a member of the UKC 2025 Organizing Committee, she successfully engaged local political and business leaders to expand KSEA's visibility across the southeastern United States.

Dr. Sung-Sil Moon exemplifies outstanding community service: consistent, creative, and genuinely dedicated to others. From the laboratory bench to the conference stage, she continues to advance KSEA's mission with humility and purpose.

2026 KSEA Awards



North Carolina Chapter
Sung-Ju Kim

Associate Professor
School of Social Work
North Carolina State University

Outstanding Chapter and Chapter President Award

Dr. Sung-Ju Kim is a tenured Associate Professor at North Carolina State University's School of Social Work and an affiliated faculty member in the School of Public and International Affairs, specializing in nonprofit management, philanthropy, and civil society. He holds a Ph.D. from Indiana University and a Master of Social Administration from Case Western Reserve University, and has published extensively in peer-reviewed journals on topics including nonprofit management, philanthropic giving, and NGO education across East Asia and the West. He has served various nonprofit organizations both in South Korea and the U.S. and Korean-American professional communities, including KSEA (President of the KSEA North Carolina Chapter (2023–2026), nonprofit director and advisor since 2017), Korean Nonprofit and Philanthropy Researchers Association (KNPRN, Founder and executive director, 2008–2024); KASWEA, SPIA, the Beautiful Foundation, and others.

2026 KSEA Awards



Georgia Chapter
Jae-Kyung Lee

Associate Professor
University of Georgia

Outstanding Chapter and Chapter President Award

The Korean-American Scientists and Engineers Association has continued to expand its regional impact through scientific conferences, mentorship programs, outreach initiatives, and professional networking activities that support the Korean-American STEM community across Georgia and the southeastern United States. Under the leadership of Dr. Jae-Kyung Lee as Chapter Pres-ident in 2025, the chapter successfully organized the joint KSEA–KWiSE Southeast Chapter Con-ference, bringing together more than 50 participants from universities and research institutions across the region to strengthen interdisciplinary collaboration and engagement between the KSEA and KWiSE communities. The chapter also played an active role in regional preparation and participation in the U.S.–Korea Conference (UKC) 2025, promoting involvement of faculty, postdoctoral researchers, and students in national KSEA programs and increasing the chapter's visibility within the broader KSEA network. Additional chapter activities included executive committee meetings, membership drives, postdoctoral networking events, student and young professional outreach programs, and the successful organization of the 2026 National Math and Science Competition (NMSC), which hosted 90 student participants. These activities reflected the chapter's strong commitment to scientific exchange, mentorship, leadership development, and STEM outreach.

Dr. Jae-Kyung Lee is an Associate Professor in the Department of Physiology and Pharmacology at the University of Georgia College of Veterinary Medicine, with affiliated appointments in the Neuroscience Ph.D. Program and the Regenerative Bioscience Center. Her research focuses on neuroinflammation and neurodegenerative diseases, including Parkinson's disease, Alzheimer's disease, and Lewy body disorders, with particular emphasis on immune regulation and α-synuclein pathology. Her research has been supported by the National Institute of Neurological Disorders and Stroke and the Michael J. Fox Foundation for Parkinson's Research.

Prior to serving as Chapter President, Dr. Lee contributed as a Vice President in 2024, helping organize seminars and networking events that promoted scientific exchange and professional collaboration among Korean-American researchers across academia and industry. She has also demonstrated a sustained commitment to mentorship and community service through the KWiSE–WISET Global Mentorship Program, serving as a mentor for four consecutive years (2021–2024) and supporting approximately 50 mentees annually from Korea and the United States through career guidance and research mentorship. In recognition of her scientific achievements, leadership, and service within the Korean-American scientific community, Dr. Lee received the Korean-American Women in Science and Engineering, honoring both her contributions to neuroimmunology research and her dedication to mentoring the next generation of scientists.

2026 KSEA Awards



Woo Jong "Kevin" Kim

Senior Associate, SOCOTEC US

Young Generation Leadership Award (presented by KSEA and KOFST)

Mr. Woo Jong "Kevin" Kim is recognized for his outstanding leadership and sustained contributions to the Korean-American Scientists and Engineers Association (KSEA), particularly in advancing the growth, engagement, and development of the Young Generation (YG) community.

Over the course of his involvement with KSEA, Mr. Kim has demonstrated a remarkable trajectory of leadership, beginning as a student leader and continuing through chapter and national roles. From serving as Student Chapter President to Young Professional Director, Chapter Vice President, and currently as a Council Member of the New York Metropolitan Chapter, he has consistently dedicated himself to strengthening the foundation and future of the organization. His leadership reflects not only continuity but also a deep commitment to cultivating the next generation of KSEA members. At the national level, Mr. Kim has played a pivotal role in shaping YG initiatives and programs. As Young Generation Director and as Chair of IMPACTs, he led efforts to design and deliver impactful programming that connects students and early-career professionals with emerging technologies, career pathways, and professional networks. Under his leadership, these initiatives have expanded opportunities for engagement and learning, while reinforcing KSEA's mission to support the growth of young scientists and engineers.

Mr. Kim's contributions are distinguished by his focus on building a strong and sustainable YG pipeline. He has been instrumental in developing structured mentorship and professional development programs, strengthening member engagement and retention, and fostering meaningful collaboration across generations within KSEA. His efforts have helped create an inclusive and supportive environment where students and young professionals can connect, grow, and contribute to the broader community. Beyond his formal roles, Mr. Kim is widely recognized for his dedication to mentoring emerging members and promoting a culture of service and leadership. His ability to connect individuals, inspire participation, and build lasting relationships has significantly enhanced the vitality and cohesion of the YG and YP community. For his exemplary leadership, vision, and enduring commitment to the advancement of KSEA's Young Generation, Mr. Woojong Kim is a most deserving recipient of the 2026 Young Generation Leadership Award.

2026 KSEA Awards

Hanwha Group

2026 Distinguished Sponsor Award

Hanwha Group is recognized for its steadfast dedication to advancing STEM education and empowering the next generation of innovators. Since 2021, the organization has been a vital benefactor of KSEA's National Math and Science Competition, contributing $70,000 annually for total sponsorship of $350,000 to date. In addition to this foundational support, Hanwha Group proudly partnered with KSEA to inaugurate the KSEA Mathematics Olympiad. By annually awarding $3,000 scholarships to ten top finalists (total of $30,000 per year), Hanwha grants these bright students the opportunity to attend prestigious national math camps across the United States. In profound appreciation of their philanthropic leadership and investment in young talent, the Committee is proud to recognize Hanwha Group.

2026 KSEA Honors



Kang-Wook Lee

Retired from IBM T.J. Watson Research Center

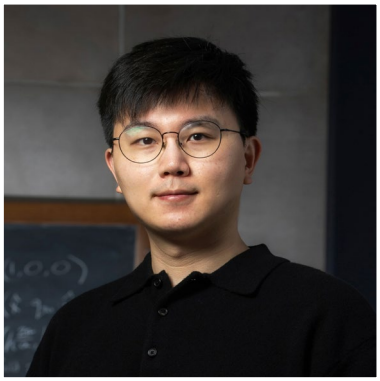
2026 Distinguished Service Membership (DSM)

Dr. Lee had a distinguished career, having worked for IBM T.J. Watson Research Center (1988-2018) and receiving 3 IBM Outstanding Technical Achievement Awards, Tenth Plateau IBM Invention Achievement Awards as well as 2 IBM Research Division Awards and 7 other IBM recognition awards for contributions. He received his Ph.D. from Rutgers University (Organic Chemistry) in 1982 and BS from Seoul National University (Applied Chemistry) in 1974. He served Korean Navy Officer & Naval Academy Instructor (해군사관학교 교관) for 1974-1977. He was an awardee of the 2021 Outstanding Contribution to KSEA award presented jointly by KSEA and the Ministry of Science & ICT.

During his tenure as the KSEA's 37th President, he chaired the UKC2008 with a great success in fund-raising as well as scientifically superb programs. He led to have both the Bylaws and Policies amended enabling E-voting and establishing two VPs. Dr. Lee's service record within KSEA is unparalleled in both depth and breadth. His cumulative service activities reflect decades of continuous engagement at the chapter, regional, and national levels. More importantly, his service has been transformative rather than merely participatory. One of Dr. Lee's most enduring legacies is his foundational role in KSEA's educational outreach. As the founding chair of the first KSEA New York Metro Math & Science Olympiad (KMSO) in 1994, he helped establish a flagship program that has now continued for more than three decades and inspired similar national programs, including the National Math & Science Competition (NMSC). His vision for engaging students and parents helped anchor KSEA's mission firmly within the broader Korean-American community. Dr. Lee has also been a central architect of KSEA's Young Generation (YG) programs. From early regional YG activities in the late 1990s to the eventual creation of the Young Generation Leadership Forum (YGLF) and its evolution into today's YGTLC (Ygnite), his ideas, proposals, and fundraising efforts laid the groundwork for programs that now serve hundreds of young scientists and engineers annually.

Dr. Kang-Wook Lee exemplifies the very essence of the Distinguished Service Member Award. He serves with humility, works tirelessly behind the scenes, and approaches every responsibility with a deep sense of stewardship. His contributions have shaped KSEA's programs, strengthened its institutions, and inspired generations of members.

2026 KSEA Young Investigator Grants



Jong Yeon Lee

Assistant Professor
University of Illinois
Urbana-Champaign

2026 KSEA YIG Award in Science

Dr. Jong Yeon Lee is an Assistant Professor at the University of Illinois, Urbana-Champaign. He received his B.S./M.S. in Physics and Mathematics from the California Institute of Technology, Pasadena, in 2015. He earned his Ph.D. in Physics from Harvard University in 2020, under the supervision of Professor Ashvin Vishwanath.

Dr. Lee has received numerous accolades, including the AKPA Outstanding Young Researcher Award in 2022, the Gordon and Betty Moore Fellowship in Kavli Institute of Theoretical Physics, Santa Barbara, for 2020-2023, and the 2015 Richard P Feynman Prize. His prolific publication record exceeds 30 papers published in high impact journals including solo author paper in Phys. Rev. Lett. in 2025. He has given over 40 invited talks at very prestigious venues.

Dr. Lee's research is distinguished by its ability to turn abstract ideas from quantum information into concrete conceptual advances and experimentally relevant tools for open quantum systems. On the experimental front, he developed efficient decoding observables that make measurement-induced phase transitions accessible on existing platforms by linking entanglement criticality to classical post-processing protocols. On the theoretical front, he discovered strong-to-weak spontaneous symmetry breaking, a new phenomenon in open quantum systems that has opened a significant new research direction and drawn broad attention in the field. In particular, his theory offers a bottom-up route from microscopic dynamics to transport laws such as diffusion and sound, directly connecting microscopic models to measurable quantities in quantum devices. Furthermore, he has established an information-theoretic framework for nonequilibrium phases of matter, providing new ways to characterize phases ranging from quantum error-correcting codes under decoherence to noisy quantum resource states. Together, these advances provide algorithmic, diagnostic, and theoretical tools that bridge fundamental quantum information theory and the practical development of next-generation quantum technologies.

2026 KSEA Young Investigator Grants



Junsoo Kim

Assistant Professor
Department of Mechanical Engineering
Northwestern University

2026 KSEA YIG Award in Engineering

Dr. Junsoo Kim is an Assistant Professor in the Department of Mechanical Engineering at Northwestern University. He received his B.S. and M.S. degrees in Mechanical & Aerospace Engineering from Seoul National University, Republic of Korea, in 2011 and 2013, respectively. He earned his Ph.D. in Materials Science & Mechanical Engineering from Harvard University in 2022, under the supervision of Professor Zhigang Suo.

Dr. Kim has received several Honors and Awards, including the Kavli Frontiers of Science Fellow (2024) from the National Academy of Sciences, Scialog Fellow (2024) from the Research Corporation for Science Advancement, two Scialog Awards (2024 and 2025), and the Haythornthwaite Foundation Research Initiation Grants (2025). His prolific publication record is significant over 38 papers published in top journals including Nature, Science, Advance Materials, Proceedings of the National Academy of Sciences, Matter, and Chemical Reviews.

Dr. Kim's research to reinforce the durability of soft materials has great potential to address grand challenges in our society such as polymer pollution and health care. The impact of his study reaches fundamental science in soft matter, engineering of soft biomedical devices, and even traditional materials such as tires. In the past five years, he identified a novel design principle to greatly improve the fracture resistance of hydrogels and rubbers by engineering the molecular structure of polymer networks. He also showed how to apply this principle to various types of soft materials such as industrial polymers and natural polymers. Dr. Kim is a rising research star and leading scholar in the fracture of soft materials, a topic area that has drawn a large amount of interest due to its far-reaching impact and interdisciplinary characteristics.

Program at a Glance

<table>
<tr><th>Time</th><th>8/4/2026
(Tue)</th><th>8/5/2026
(Wed)</th><th>8/6/2026
(Thu)</th><th>8/7/2026
(Fri)</th><th>8/8/2026
(Sat)</th></tr>
<tr><td>7:00-8:00</td><td colspan="5">Breakfast</td></tr>
<tr><td>8:00-
10:00</td><td rowspan="2"></td><td rowspan="5">SEED</td><td>Opening / Plenary I</td><td>Plenary II,
Fireside chat with
Chris A. Malachowsky</td><td>TG
Symposiums/
FIRE</td></tr>
<tr><td>10:00-
10:15</td><td colspan="3">Break</td></tr>
<tr><td>10:15-
12:00</td><td>Signature Symposiums</td><td>Sponsor Forums</td><td>Closing /
Plenary III</td></tr>
<tr><td>12:00-
1:00</td><td rowspan="7">SEED</td><td colspan="3">Lunch</td><td rowspan="7"></td></tr>
<tr><td>1:00-3:00</td><td>Distinguished
Sponsor Forums</td><td>KSEA Forums</td></tr>
<tr><td>3:00-3:15</td><td colspan="3">Break in the Exhibit Hall</td></tr>
<tr><td>3:15-5:00</td><td>KSEA
Forums</td><td>IES
opening</td><td>TG
Symposiums</td><td>FIRE</td><td>IES</td></tr>
<tr><td>5:00-6:45</td><td rowspan="2">Sponsor
Welcome
Reception
&
Dinner
Invitation
Only</td><td>TG
Symposiums</td><td>FIRE</td><td>IES</td><td>Posters</td><td colspan="2">IES SPC</td></tr>
<tr><td>7:00-9:00</td><td colspan="2">Gala Dinner</td><td colspan="2">Networking Dinner</td></tr>
</table>

Room Information

Thursday, August 6, 2026								
Room/Time	7:00-8:00	8:00-10:00	10:15-12:00	12:00-1:00	1:00-3:00	3:15-5:00	5:00-6:45	7:00-9:00
International Ballroom I	Sponsor Booth / IES Global R&D Demo							
International Ballroom II			Signature Symposium - Space					
International Ballroom III	Breakfast			Lunch			Bio I (1 of 2)	
National Ballroom A		Opening / Plenary I	Signature Symposium - AI					Gala Dinner
National Ballroom B								
National Ballroom C								
Royal Melbourne						IES		
Royal Dublin	IES Startup Demo							
Augusta A					Hyundai Motors Chung Mong Koo Foundation Forum		IT, Quantum & Semiconductors	
Augusta B							Infrastructure, Mobility & Robots	
Champions-Gate			Signature Symposium - Semiconductors		Innopolis Forum		FIRE	
Olympic					NRF	Joint Science Policy and Diplomacy Forum	Bio I (2 of 2)	
Colonial A					TIPA	KEIT Forum	Emerging Areas	
Colonial B					KOR-US Quantum	KWiSE - WISET Women Forum	Basic Sciences	
Congressio-nal A			Ewha womans University Community Meeting (11:00-1:00)				Agriculture, Food, Nutrition	
Congressio-nal B				Korea University Community Meeting(12:00-2:00)		NST Forum	Energy, Materials & Resources	
Oakmont A					Yonsei University Community Meeing(2:00-3:30)		Aerospace & Ocean	
Oakmont B						KIAT-K TAG		
Suite#245		Hanyang University Interview						

*Please note that the room assigned above is subject to change.

Friday, August 7, 2026								
Room/ Time	7:00-8:00	8:00-10:00	10:15-12:00	12:00-1:00	1:00-3:00	3:15-5:00	5:00-6:45	7:00-9:00
International Ballroom I	Sponsor Booth							
International Ballroom II				Poster Prep (12:00-5:00) Poster Session (5:00-6:45)				
International Ballroom III	Breakfast			Lunch				
National Ballroom A, B, C		Plenary II						Networking Dinner
Royal Melbourne			Gyeongsang National Univ.			IES (3:15-5:00) IES SPC (5:00-6:45)		
Augusta A			Innopolis Forum			IT, Quantum & Semiconductors		
Augusta B			Rural Development Admin.		KWiSE - WISET Women Forum	Infrastructure, Mobility & Robots		
Champions-Gate			SNU Forum	YGF Forum		FIRE		
Olympic					Future Tech	Bio II		
Colonial A			KIAT			Emerging Areas		
Colonial B			Sookmyung Women's University (SMWU)			Bio I		
Congressio-nal A			Catholic Kwandong & Kangwon National Univ.	R&D Leadership Forum		Agriculture, Food, Nutrition		
Congressio-nal B			KHIDI	Univ. Leadership Forum		Energy, Materials & Resources		
Oakmont A			IES Global R&D			Aerospace & Ocean		
Oakmont B						Basic Sciences		
Suite#245		Hanyang University Interview						

*Please note that the room assigned above is subject to change.

Saturday, August 8, 2026					
Room/Time	7:00-8:00	8:00-10:00	10:15-12:00	12:00-1:00	1:00-2:00
International Ballroom II					
International Ballroom III	**Breakfast**				
National Ballroom A			**Closing / Plenary III**		
National Ballroom B					
National Ballroom C					
Royal Melbourne A, B					
Augusta A		**IT, Quantum & Semiconductors**			
Augusta B		**Infrastructure, Mobility & Robots**			
ChampionsGate		**FIRE**			
Colonial A		**Emerging Areas**			
Colonial B		**Bio I**			
Congressional A		**Agriculture, Food, Nutrition**			
Congressional B		**Energy, Materials & Resources**			
Oakmont A		**Aerospace & Ocean**			
Oakmont B		**Basic Sciences**			
Olympic A, B		**Bio II**			

*Please note that the room assigned above is subject to change.

Plenary Schedule

Thursday, August 6, 2026			
8:00–10:00 am	**Opening Ceremony** **(Chaired by Prof. Gloria Kim & Prof. Jin W Choi)** • KSEA Introduction Video • National Anthems (Korea and USA) - Dr. Sharon Baik • Opening Remarks - Yong-Kyu Yoon, President, Korean American Scientists and Engineers Association (KSEA) • Welcoming Remarks - Oh Nam Kwon, President, Korean Federation of Science and Technology Societies (KOFST) - Won-Hwa Hong, President, KUSCO/National Research Foundation (NRF) • Congratulatory Remarks - In Kyu Park, Vice Minister for Science, Technology and Innovation Ministry of Science and ICT - Darren Michael Soto, U.S. representative for Florida's 9th district - Andy Kim, U.S. Senator, New Jersey (Video) - Joon Ho Lee, Consul General of the Republic of Korea in Atlanta - Matt Swanson, President and Chief Executive Officer of SelectFlorida - Alexander N. Cartwright, President, University of Central Florida - J. Scott Angle, Senior Vice President, University Florida • Introducing Dignitaries & Sponsor Representatives • Award Ceremony I - Outstanding Contribution to KSEA Award Presented by MSIT - Scientist of the Year Award Presented by KOFST - Engineer of the Year Award Presented by KOFST - Young Generation Leadership Award Presented by KOFST **Plenary Lecture I** - Dr. William D. Phillips, 1997 Nobel Prize in Physics for developing methods, NIST Fellow, Distinguished University Professor at the University of Maryland, College Park "***A New Measure: the Quantum Reform of the Modern Metric System***" • **Group Photo**		National Ballroom
10:00–10:15 am	Break		
10:15–12:00 pm	**UKC 2026 Signature Symposium** • AI Forum Chair: Young-Kee Kim, Professor, University of Chicago • Space Forum Chair: Eun-Suk Seo, Professor, University of Maryland • Next Generation Semiconductor Forum Chair: Jin W Choi, Professor, Michigan Tech University		National Ballroom, International Ballroom and Champions Gate
12:00–1:00 pm	Lunch		International Ballroom
1:00– 3:00 pm	Distinguished Sponsor Forums		
3:00 – 3:15 pm	Break		
3:15 – 5:00 pm	KSEA Forums (KWiSE-WISET Forum/ Science Policy & Diplomacy Forum)		IES Opening
5:00 – 6:45 pm	Fostering Innovation with Rising Expert (FIRE)	Technical Group Symposiums	IES

Thursday, August 7, 2026		
7:00 – 9:00 pm	**UKC Gala Dinner** (MC - Ms. Stella Kim) • Dinner • Opening Remarks - Yong-Kyu Yoon, President, Korean-American Scientists and Engineers Association (KSEA) • Welcome Remarks - Oh Nam Kwon, President, Korean Federation of Science and Technology Societies (KOFST) • Congratulatory Remarks - In Kyu Park, Vice Minister for Science, Technology and Innovation Ministry of Science and ICT **Awards Ceremony II** (Honors and Awards Committee Chair Prof. IL Minn) - Young Investigator Grant Award in Science - Young Investigator Grant Award in Engineering - Distinguished Membership Award - Distinguished Sponsorship Award - Entrepreneur of the Year Award - Outstanding Community Service Award - Outstanding Chapter and Chapter President Award (2) • Music Performance Rohan Reid Jazz Trio	National Ballroom

Friday, August 7, 2026				
8:00–10:00 am	**Plenary Session** **(Chaired by Prof. Soyoon Kum & Prof. Harold Kim)** • KSEA-KUSCO Graduate Scholarship Award • Research Vision Talks • Hee Kwon Jung, President, Korea Innovation Foundation (Innopolis) "***Innovation Ecosystem of INNOPOLIS***" • Ricky Kim, Chief Operating Officer (COO), Open Healthcare ***"Riding the Next K-Wave: K-Dx"*** • Seung-Wook Baek, Director/Program Manager, National Research Foundation of Korea (NRF) on behalf of Korea-US Quantum Technology Cooperation Center ***"The Quantum Race: Unlocking the Invisible"*** • Jaeyoon Kim, Third General Manager of Research Department, Kongju National University ***"Kongju National University's Glocal University 30 Initiative: Advancing Regional Innovation through Global Partnerships"*** **Plenary Lecture II** - Chris A. Malachowsky, Co-Founder, Fellow, and Senior Technology Executive of NVIDIA ***"Expanding Access, Building the Future"*** Fireside Chat with Chris A. Malachowsky			National Ballroom
10:00–10:15 am	Break			
10:15–12:00 pm	Sponsor Forums			Various
12:00–1:00 pm	Lunch			International Ballroom
1:00– 3:00 pm	KSEA Forums (University Leadership Forum/ R&D Leadership Forum/KWiSE Forum/ KOFST Next Generation Alumni Forum)			Various
3:00 – 3:15 pm	Break			
3:15 – 5:00 pm	Technical Group Symposiums	Fostering Innovation with Rising Expert (FIRE)	IES	Various

Saturday, August 9, 2026			
5:00 – 6:30 pm	Poster Session	IES Startup Pitch Competition	
7:00 – 9:00 pm	Networking Dinner		National Ballroom
8:00–10:00 am	Technical Group Symposiums		Various
10:00–10:15 am	Break		
10:15–12:00 pm	**Plenary & Closing** **(Chaired by Dr. Jinho Park & Prof. Hyun Dong Kim)** • **Plenary Lecture III** - Dr. Ji-Hyun Lee, Former President, American Statistical Association, Professor, University of Florida ***"Food, Medicine, and Belief: Scientific Evidence in the Age of Uncertainty"*** • **Award Ceremony III** - IES Award - UKC 2026 Poster Award • UKC 2026 Raffle Announcement • UKC 2027 Announcement, Ohbong Kwon, President-Elect of KSEA • Closing Remarks, Yong-Kyu Yoon, President of KSEA		National Ballroom

Signature Symposium

AI Signature Symposium

Thursday, Aug 6 10:15am – 12:00pm National Ballroom

Chair



Young-Kee Kim

Albert A. Michelson Distinguished Service Professor of Physics, University of Chicago



In Kyu Park

Vice Minister for Science, Technology, and Innovation, MSIT

Speakers



Rebbeca Willet

Worah Family Professor of Statistics and Computer Science
Faculty Director of AI, Data Science Institute
The University of Chicago



Sowjanya Gollapinni

Senior Scientist, Los Alamos National Laboratory
Co-Spokesperson, DUNE Experiment

Panelists



Oh Nam Kwon

President of the Korean Federation of Science and Technology Societies (KOFST)



William Phillips

Nobel Laureate in Physics
Fellow, NIST
Distinguished University Professor,
University of Maryland



Youngsuk "YS" Chi

Chairman, Elsevier
Director,
Corporate Affairs at RELX



Sangig Rho

Executive Vice President, ACRYL Inc.

The AI Signature Symposium: The Genesis Mission highlights a transformative U.S. national initiative launched in November 2025 and led by the U.S. Department of Energy (DOE). The Genesis Mission brings together national laboratories, academia, industry, and government partners to harness artificial intelligence for breakthroughs in energy dominance, discovery science, and national security.

This symposium showcases how AI, high-performance computing, and experimental science are converging through the Genesis Mission to accelerate innovation at an unprecedented scale.

It also provides a platform to discuss ways to strengthen U.S.–Korea collaboration in AI, fostering deeper partnerships that advance shared scientific and technological priorities.

Time		Title and Speaker
10:15		**Opening Remarks** Young-Kee Kim
Part I: Presentations **About The Genesis Mission**	10:20	**Introduction of the Genesis Mission** Young-Kee Kim
	10:30	**Perspectives from National Laboratories** Sowjanya Gollapinni (LANL)
	10:50	**Perspectives from Academia** Rebbeca Willet (University of Chicago)
Part II: Panel Discussions **Strengthening the Korea-U.S. Partnerships in AI: Opportunities and Pathways**	11:10	• Moderator - Young-Kee Kim / Panelists - Oh Nam Kwon (KOFST), William Phillips (NIST, University of Maryland), Youngsuk (YS) Chi (Elsevier), Sangig Rho (ACRYL Inc). Sowjanya Gollapinni (LANL), Rebbeca Willet (University of Chicago)
11:55		**Closing Remarks and Group Photo**

*Please note that the schedule mentioned above is subject to change based on unforeseen circumstances.


UKC 2026
Florida


The Genesis Mission
Japan: 1st International Partner of the Genesis Mission
June 4, 2026
"The U.S. DOE and Japan's Ministry of Education, Culture, Sports, Science and Technology (MEXT) and Ministry of Economy, Trade and Industry (METI) announced an historic $1 billion strategic partnership making Japan the first international partner in President Trump's Genesis Mission. Today's announcement marks one of the most significant scientific and technological collaborations between
United Sta
UKC 2026


EXIT


EXIT
HDMI1
UKC 2026 Florida
KASSTA

AeroSpace Signature Symposium

Thursday, Aug 6 10:15am – 12:00pm International Ballroom

Chair



Eun-Suk Seo

President of KASSTA
Professor of Physics
University of Maryland

Speakers



Soyeon Yi

Astronaut, GBD at SPEX, Incl



Dae Young Lee

Professor, Department of Aerospace Engineering, KAIST



Eun Jung Chae

Professor, Dept. of Mech. and Aerospace Engineering, California State University, Long Beach



Kyongsik Yun

Technologist, NASA Jet Propulsion Laboratory

Shaping the future of Space

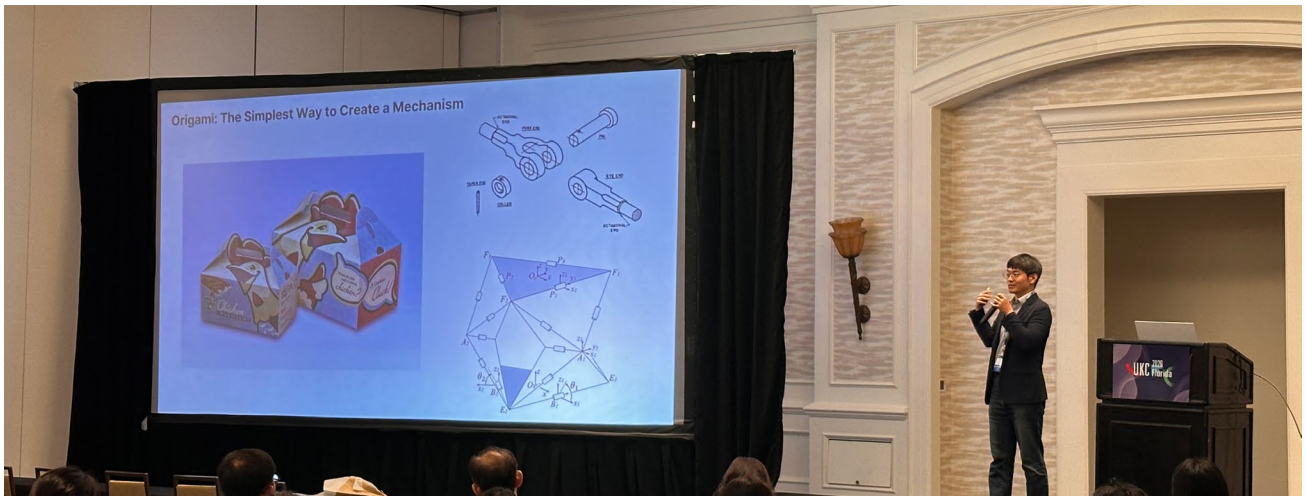
The AeroSpace Signature Forum offers a comprehensive perspective on the future of space through advances in human spaceflight, soft robotics, aerospace engineering, and next-generation space computing. Bringing together leading experts from academia, industry, and national laboratories, the forum highlights innovative technologies and interdisciplinary approaches that are redefining the capabilities of space systems and enabling the next era of exploration beyond Earth orbit. The forum is designed to inspire new partnerships and strategic collaborations while providing a forward-looking view of how scientific discovery and engineering innovation can collectively expand humanity's presence and capabilities in space.

- KASSTA - Korean American AeroSpace Science and Technology Association

Time	Title and Speaker
10:15	**Opening Remarks** Eun-Suk Seo (Chair) **Welcoming Remarks** Yong-Kyu Yoon (President of KSEA) **Congratulatory Remarks** - In Kyu Park (Vice Minister for Science, Technology and Innovation, Ministry of Science and ICT) - Chang-Jeon Hwang (Vice-President of Korea Aerospace Research Institute, KARI)
10:25	**Healthcare Challenges of Space Flight** Soyeon Yi (Astronaut, GBD at SPEX, Inc.)
10:45	**Reliability through Softness: A Soft Robotics Approach to Space Exploration** Dae Young Lee (Department of Aerospace Engineering, KAIST)
11:05	**Aerodynamic Performance of the Next Generation Aircraft/Spacecraft** Eun Jung Chae (Department of Mechanical and Aerospace Engineering, California State University, Long Beach)
11:25	**Next-Generation Space Processors: HPSC and Hybrid Co-Processor Architectures** Kyongsik Yun (Technologist, NASA JPL)
11:45	**Concluding Remarks, Awards and Photos**

*Please note that the schedule mentioned above is subject to change based on unforeseen circumstances.


April 8. 2008
Baikonur cosmodrome


Origami: The Simplest Way to Create a Mechanism


UKC 2026 - SPACE FORUM
Aerodynamic Performance of
Next-Generation
Aircraft and Spacecraft
Dr. Eun Jung Chae
LONG BEACH

Next-Generation Semiconductors Signature Symposium

Thursday, Aug 6 10:15am – 12:00pm ChampionsGate

Imagining Tomorrow's Semiconductor Technologies

The Signature Symposium on Semiconductors will explore emerging trends, opportunities, and challenges shaping the future of semiconductor technologies and the global semiconductor ecosystem. The forum aims to bring together experts from academia, industry, government, and research organizations to exchange ideas on innovation, manufacturing, advanced materials, packaging, supply chains, workforce development, and future applications enabled by semiconductor technologies. Through invited talks and a panel discussion, the forum seeks to encourage collaboration, foster innovation, and promote strategic partnerships that will help advance the next era of semiconductor research, development, and commercialization.

Chair



Jin W. Choi

President of KEEE
Professor of Electrical and Computer Engineering
Michigan Technological University

Speakers



Jinho Ahn

Executive Vice President for Research,
Hanyang University



Dae-Seok Byeon

President of
Korea Advanced Nano Fab Center, KANC



Rockwell Hsu

Technical Leader of Engineering,
Cisco System, Inc



Charles Arvin

Director Integration Development, Advanced Packaging, Skywater

Time	Title and Speaker
10:15	**Welcoming Remarks and Introduction** Jin W. Choi (Symposium Chair)
10:20	**From Imagination to Reality: The EUV Lithography Journey through Open Innovation** Jinho Ahn (Executive Vice President for Research, Hanyang University)
10:45	**Innovation and Imagination of Compound Semiconductors Accelerating the Penta-Singularity Era** Dae-Seok Byeon (President, Korea Advanced Nano Fab Center, KANC)
11:10	**Meeting System Requirements for High-Speed Signaling in Scalable AI Data Centers: Design Challenges and Manufacturing Considerations** Rockwell Hsu (Technical Leader, Engineering, Cisco Systems, Inc.)
11:35	**Panel Discussion** Moderator: Jin W. Choi

*Please note that the schedule mentioned above is subject to change based on unforeseen circumstances.

1. About the Forum

The Next-Generation Semiconductors Signature Symposium at UKC 2026 brought together experts from academia, industry, and research organizations to discuss emerging technologies, opportunities, and challenges shaping the future of the semiconductor industry. The symposium addressed several critical areas across the semiconductor ecosystem, including advanced lithography, compound semiconductors, high-speed systems for artificial intelligence, and advanced semiconductor packaging and manufacturing.

The symposium was designed to provide a forum for exchanging perspectives on semiconductor innovation, manufacturing, materials, packaging, and emerging applications, while promoting stronger collaboration among academia, industry, government, and research organizations.

2. Introduction and Welcoming Remarks

Symposium Chair, Dr. Jin W. Choi, opened the session by welcoming the speakers and participants and introducing the theme of the symposium, "***Imagining Tomorrow's Semiconductor Technologies.***" In his opening remarks, he highlighted the rapidly changing semiconductor landscape and the increasing importance of innovation across the entire semiconductor ecosystem.

He emphasized that advances in semiconductor technologies increasingly require collaboration across disciplines and sectors, from fundamental research and materials development to fabrication, packaging, systems integration, and manufacturing. The symposium was intended to provide participants with perspectives spanning these different areas and to encourage future collaboration and partnerships.

3. Presentations

Four invited presentations were delivered during the symposium.

From Imagination to Reality: The EUV Lithography Journey through Open Innovation
Jinho Ahn, Executive Vice President for Research, Hanyang University

Dr. Ahn discussed the development of extreme ultraviolet (EUV) lithography and its evolution from an ambitious technological concept into a critical technology for advanced semiconductor manufacturing. The presentation highlighted the importance of sustained research, technological innovation, and open collaboration in overcoming the scientific and engineering challenges associated with EUV lithography.

Innovation and Imagination of Compound Semiconductors Accelerating the Penta-Singularity Era
Dae-Seok Byeon, President, Korea Advanced Nano Fab Center (KANC)

Dr. Byeon presented emerging developments and opportunities in compound semiconductor technologies. The presentation addressed the increasing importance of compound semiconductors for future applications and discussed how continued innovation in materials, fabrication, and device technologies can contribute to the rapidly evolving semiconductor ecosystem.

Meeting System Requirements for High-Speed Signaling in Scalable AI Data Centers: Design Challenges and Manufacturing Considerations
Rockwell Hsu, Technical Leader, Engineering, Cisco Systems, Inc.

Dr. Hsu discussed high-speed signaling challenges associated with rapidly expanding AI computing and data-center platforms. His presentation addressed system-level design requirements as signaling speeds and computational demands continue to increase, with particular emphasis on signal and power integrity, manufacturing considerations, and the interaction between semiconductor devices, packaging, printed circuit boards, and system design.

Establishing Advanced Packaging Manufacturing at NeoCity
Charles Arvin, Director, Integration Development, Advanced Packaging, SkyWater

Dr. Arvin discussed efforts to establish advanced semiconductor packaging manufacturing capabilities at NeoCity. The presen-

tation provided an industry perspective on the growing strategic importance of advanced packaging and the development of domestic infrastructure and manufacturing capabilities needed to support next-generation semiconductor technologies.

Together, the four presentations provided complementary perspectives spanning semiconductor lithography, materials and devices, high-speed electronic systems, and advanced packaging and manufacturing.

4. Panel Discussion

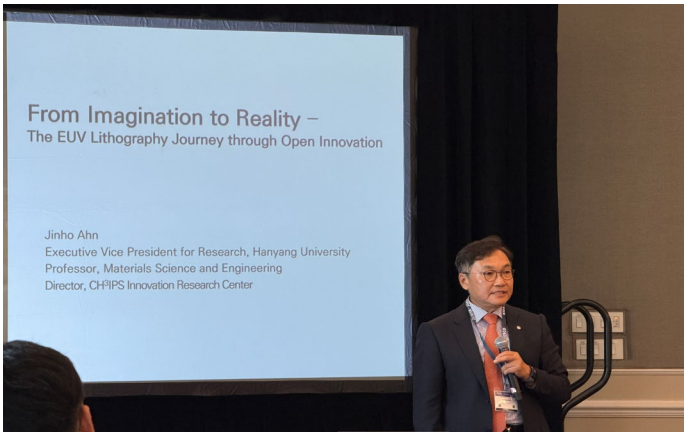
A panel discussion had originally been planned following the invited presentations. However, because of the limited symposium time and the addition of the fourth presentation, the panel discussion was not held.

The presentations nevertheless provided participants with a broad view of current technological developments and challenges across different segments of the semiconductor ecosystem.









Technical Clusters

Cluster

Aerospace/Ocean	**C-3**	Chair: Martin Byung-Guk Jun (Purdue University) Co-Chairs: Cha Bum Lee (Texas A&M University), Chang-Hwan Choi (Stevens Institute of Technology)
Agriculture/Food/Nutrition	**B-2**	Chair: Sung Woo Kim (North Carolina State University) Co-chairs: Jooyeoun Jung (Oregon State University), Soonkyu Chung (University of Massachusetts Amherst)
Biology/Biotechnology/Health	**B-1 / B-3 / C-1**	Chair: James Moon (University of Michigan) Co-Chairs: Chun Gwon Park (Sungkyunkwan University) Youngjae Chun (University of Pittsburgh) Jung Soo Suk (University of Maryland)
Energy/Materials/Resources	**C-2/ C-4**	Chair: Jaewon Lee (University of Missouri, Columbia) Co-Chairs: Hyun-Tae Hwang (University of Kentucky) Sungwoo Nam (University of California, Irvine), Inseok Chae (Texas Tech University)
IT/Quantum/Semiconductors	**C-6 / C-7**	Chair: Mingon Kang (University of Nevada, Las Vegas) Co-Chairs: Sam Chung (City University of Seattle), Jungkwun Kim (University of North Texas)
Infrastructure/Mobility/Robots	**C-5 / C-8**	Chairs: Ryan Choi (Eastern Michigan University), JuHyeong Ryu (West Virginia University) Co-Chair: Seokgi Lee (Youngstown State University), Eul-bum Lee (POSTECH)
Basic Sciences	**A-1 / A-2 / A-3**	Chair: Harold Kim (Georgia Institute of Technology) Co-Chairs: Bumjung Kim (New Jersey City University), Soeun Kim (Azusa Pacific University)
Emerging Areas (Entertainment Technology & STEAM-centered Social Sciences)	**D-1**	Chair: Hyoungah Park (Saint Peter's University) Co-Chairs: Jung Han (K-EnterTech Hub), Danielle Lee (American Board of Internal Medicine), Benjamin Ahn (The Ohio State University)

UKC 2026 features eight interdisciplinary technical clusters that bring together researchers, industry leaders, and innovators across diverse fields of science and technology. These clusters highlight emerging research areas, foster cross-disciplinary collaboration, and provide a platform for exchanging ideas that drive innovation and global impact.

Technical Symposium Groups

Technical Group A-1	**Physics (PHY)**	Chair: Harold Kim (Georgia Tech) Co-Chairs: Wonhee Ko (University of Tennessee, Knoxville), K.C. Kong (University of Kansas)
Technical Group A-2	**Chemistry (CHM)**	Chair: Kyo Young Han (University of Central Florida) Co-chairs: Hoi Sung Chung (National Institutes of Health), Kwang Seob Jeong (Korea University)
Technical Group A-3	**Math/Applied Math/Statistics (MAS)**	Chair: Soeun Kim (Azusa Pacific University) Co-Chair: Seongho Song (University of Cincinnati), Daewa Kim (University of Delaware)
Technical Group B-1	**Medical and Pharmaceutical Science (MPS)**	Chair: Soojin Yoo (University of Texas - Rio Grande Valley) Co-Chair: Hungoo Lee (Johns Hopkins School of Medicine)
Technical Group B-2	**Food, Agriculture, Ecology and Nutrition (FAN)**	Chair: Sung Woo Kim (North Carolina State University) Co-chairs: Jooyeoun Jung (Oregon State University), Soonkyu Chung (University of Massachusetts Amherst)
Technical Group B-3 / C-1	**Biological and Biomedical Sciences (Biology, Molecular Biology, Cognitive Science, Botany, Zoology, Biomechanics, etc.)/Bioengineering and Biomedical Engineering (BME)**	Chair: James Moon (University of Michigan) Co-Chairs: Young Bin Choy (Seoul National University), Youngjae Chun (University of Pittsburg)
Technical Group C-2	**Chemical, Textile, Energy, and Nuclear Engineering (CHE)**	Chair: Hyun-Tae Hwang (University of Kentucky) Co-Chair: Jaewon Lee (University of Missouri), Tae-Sik Oh (Auburn University)
Technical Group C-3	**Mechanical, Aerospace and Naval Engineering (MAN)**	Chair: Eon Soo Lee (New Jersey Institute of Technology) Co-Chairs: Hongseok Choi (Clemson University), Junsoo Kim (Northwestern University)
Technical Group C-4	**Materials Science and Engineering, Nanotechnology (MSE)**	Chair: Sung Woo Nam (University of California, Irvine) Co-Chairs: Soon-Yong Kwon (Ulsan National Institute of Science & Technology), Chang-Yong Nam (Brookhaven National Laboratory)
Technical Group C-5	**Civil and Environmental Engineering, Architecture (CEA)**	Chair: JuHyeong Ryu (West Virginia University) Co-Chairs: Eul-Bum Lee (POSTECH), Boo Hyun Nam (Kyung Hee University)
Technical Group C-6	**Electrical and Computer Engineering (ECE)**	Chairs: Jin W. Choi (Michigan Technological University) Co-Chairs: Jeongwon Park (University of Nevada at Reno), JungKwun Kim (University of North Texas)
Technical Group C-7	**Computer and Information Sciences (CIT)**	Chair: Sam Chung (City University of Seattle) Co-Chairs: Jaerock Kwon (University of Michigan-Dearborn), Taejin Kim (City University of Seattle)
Technical Group C-8	**Industrial and Systems Engineering Management Sciences and Decision Science (IMD)**	Chair: Hyesung Park (Georgia Gwinnett College) Co-Chair: Ji-Hung (Ryan) Choi (Eastern Michigan University), Hyo Kyung Lee (Korea University)
Technical Group D-1	**Social Sciences (Anthropology, Economics, Political Science, Sociology, Public Policy, etc.), Psychology, Digital Arts, STEM Education, and Other Sciences (SSP)**	Chair: Hyoungah Park (Saint Peter's University) Co-Chairs: Jung Han (K-EnterTech Hub), Danielle Lee (American Board of Internal Medicine), Benjamin Ahn (The Ohio State University)

Poster Session Chair

Hyo-Joo Han Georgia Gwinnett College

Innovation and Entrepreneurship Symposium (IES) Group

Jeho Park Claremont McKenna College

1. Symposium Description

The Aerospace and Ocean Cluster Technical Symposium explores emerging technologies that are transforming aerospace, space exploration, ocean engineering, and autonomous systems. As humanity expands its presence beyond Earth while addressing increasingly complex challenges in maritime environments, the symposium highlights innovative research that advances the design, operation, intelligence, and resilience of next-generation aerospace and ocean systems.

The symposium features two podium sessions and one poster session showcasing recent advances in space systems and exploration, aerospace structures and aerodynamics, autonomous aerial and maritime vehicles, ocean and coastal engineering, robotics, artificial intelligence, advanced sensing, digital engineering, and computational modeling. Presentations span fundamental science, engineering innovation, and real-world applications from academia, government laboratories, and industry, emphasizing interdisciplinary approaches that bridge aerospace, ocean, manufacturing, and intelligent systems.

Supporting contributions are provided by the Mechanical, Aerospace, and Naval Engineering (C-3 MAN), Civil and Environmental Engineering and Architecture (C-5 CEA), and Industrial, Manufacturing, and Systems Engineering (C-8 IMD) Technical Groups, along with the Astronautics and Space Engineering (A-1 ASE) and Ocean Science and Engineering (A-3 OSE) Affiliated Professional Societies (APS). Together, these communities foster interdisciplinary collaboration and the exchange of ideas that advance aerospace, space, and ocean engineering.

Chair



Martin Jun

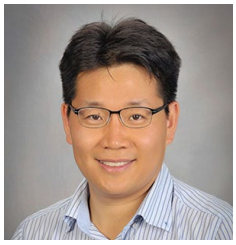
Purdue University

Co-chairs



Chang-Hwan Choi

Stevens Institue of Technology



Cha Bum Lee

Texas A&M University

2. Symposium Schedule

Aerospace and Ocean

@ Oakmont A

Thursday, Aug 6 5:00 – 6:45pm

Aerospace and Ocean Cluster Session I

Chair: Martin BG Jun (Purdue University), Chang-Hwan Choi (Stevens Institute of Technology) and ChaBum Lee (Texas A&M University)

Time	Title and Speaker
5:00	**The Role of Submerged Aquatic Vegetation in Coastal Protection and Resilience** Hyun Dong Kim (Old Dominion University)
5:25	**Performance Evaluation of Transport Algorithms in the General Ocean Model (GOM) (Invited)** Jungwoo Lee (East Carolina University)
5:50	**Performance Prediction of an Electro-Optical Payload Focus Control System Based on Artificial Neural Networks** Jingwang Kim (Korea Aerospace Research Institute)
6:05	**Apophis 2029: What Happens When an Asteroid Passes Close to Earth?** Yaeji Kim (University of Maryland)
6:20	**Beyond the Cradle: Structural Foundations for the First Step of Human Civilization on the Moon** Simon Shim (Active Design Group)

Aerospace and Ocean

@ Oakmont A

Friday, Aug 7 3:15 – 5:00pm

Aerospace and Ocean Cluster Session II

Chair: Martin BG Jun (Purdue University), Chang-Hwan Choi (Stevens Institute of Technology) and ChaBum Lee (Texas A&M University)

Time	Title and Speaker
3:15	**Generating Machining Sound Using Operational Context** Invited Eunseob Kim (Wayne State University)
3:40	**Laser Powder Directed Energy Deposition of Al6061: Defect Evolution and Processing Window Development** Chang-Hwan Choi (Stevens Institute of Technology)
4:05	**Fabrication and Synthesis of the Nickel Cobalt Sulfide Nanowire Woven Kevlar Fiber and Polyester Composites** Hyungwook Park (Ulsan National Institute of Science and Technology)
4:10	**Knowledge-Graph Integrated Agentic Physical/Shadow AI for Autonomous Ships: A Hybrid Approach with LLM and Ontology** Geonwoo Kim (POSTECH)
4:35	**Diffusiophoresis-Driven Shear Enables Non-Invasive Biofilm Removal from Confined Geometries** Sangwoo Shin (The State University of New York, Buffalo)

Poster Session

@ International Ballroom II

Friday, Aug 7 5:00 – 6:45pm

Aerospace and Ocean Cluster Poster Session
Chair: Martin BG Jun (Purdue University), Chang-Hwan Choi (Stevens Institute of Technology) and ChaBum Lee (Texas A&M University)

P1	**Geometry-Controlled Deployment Energy in FW-TAK Kirigami** Yeongeun Ki (Purdue University)
P2	**Indigenous Development of High Resolution Optical Camera for CAS500(Compact Advanced Satellite 500) -1 and -2 in Korea** Deoggyu Lee (Korea Aerospace Research Institute)
P3	**Structural Reorganization of the Global Container Shipping Network under Geopolitical Risk: The Case of the Red Sea Crisis** Suyeon Park (Inha University)
P4	**CABLESSail: Solar Sail Momentum Management Using Shape Control** Soojeong Lee (University of Minnesota – Twin Cities)
P5	**Interpretable Prediction of Stem-to-Stem Contact-Regime Boundaries in Submerged Aquatic Vegetation using a Physics-guided Teacher-Student Surrogate Framework** Sebin Oh (Old Dominion University)
P6	**μLIBS : ELEMENTAL MAPPER, IN SITU PLANETARY EXPLORATION** Dong Jae Lee (Purdue University)
P7	**Effectiveness of Mold and Dampness Interventions for Occupant Health** San Jin (University of Texas, Arlington)

3. Symposium Summary

Session I

Aerospace and Ocean Cluster Session I brought together research spanning coastal engineering, ocean modeling, aerospace systems, planetary science, and future space infrastructure. The session opened with invited presentations on the role of submerged aquatic vegetation in coastal protection and resilience and the performance of transport algorithms in ocean modeling. These presentations highlighted the importance of combining physical understanding with computational approaches to address complex coastal and marine challenges. The session then expanded into aerospace and space applications, including artificial neural network-based performance prediction for an electro-optical payload focus control system, the 2029 close approach of the asteroid Apophis, and structural foundations for future human civilization on the Moon. Collectively, the presentations demonstrated how advanced modeling, intelligent systems, and engineering design are contributing to increasingly complex challenges across ocean, aerospace, and space environments.

Session II

It highlighted emerging research at the intersection of intelligent manufacturing, advanced materials, autonomous systems, and fundamental engineering science. The invited presentations addressed machining sound generation

using operational context and laser powder directed energy deposition of Al6061, demonstrating the growing importance of data- driven approaches and advanced manufacturing technologies. Additional presentations covered advanced composite materials, knowledge-graph-integrated agentic AI for autonomous ships, and non-invasive biofilm removal using diffusiophoresis-driven shear. Together, these studies illustrated the increasing convergence of artificial intelligence, materials, manufacturing, and physics-based approaches in developing next-generation engineering systems. The session also provided a valuable connection between manufacturing research and the broader aerospace and ocean engineering communities.

Poster Session

The poster session further demonstrated the interdisciplinary breadth of the Aerospace and Ocean Cluster. Topics included deployable kirigami structures, high-resolution satellite imaging, global container shipping networks under geopolitical risk, solar sail control, physics-guided modeling of submerged aquatic vegetation, in situ planetary exploration, and environmental health. The session provided an opportunity for participants to exchange ideas across aerospace, space, maritime, coastal, and environmental engineering and to identify potential areas for future interdisciplinary collaboration.

4. Future Directions

Looking ahead, the Aerospace and Ocean Cluster will continue to strengthen interdisciplinary collaboration across aerospace, space, ocean, manufacturing, and intelligent systems. Emerging areas such as artificial intelligence, autonomous systems, advanced sensing, digital engineering, and computational modeling provide important opportunities to connect researchers across traditionally distinct disciplines.

Future symposia should further encourage collaboration among academia, government laboratories, and industry while expanding participation across the supporting Technical Groups and Affiliated Professional Societies. Strengthening these connections will help the cluster serve as a broader platform for exchanging ideas, developing collaborative research, and addressing emerging challenges in aerospace, space, and ocean engineering.

5. Group Photos







Agriculture, Food & Nutrition

AFN Cluster hosted 4 Cluster sessions and 1 Sponsor forum (RDA Forum). Three oral sessions represented 3 unique areas consisting the AFN Cluster: Agriculture, Food, and Nutrition and the poster session was inclusive of all AFN. There were 18 oral presentations and 10 poster presentations.

On Thursday, Nutrition Session (chaired by Dr. Soonkyu Chung) started with the welcome and introduction by Dr. Sung Woo Kim (Cluster Program Chair) followed by 6 esteemed talks by Dr. Min-Hyun Kim, Dr. Seung Eun Jung, Dr. Sangyong Choi, Dr. Heewon Gray, Dr. Ji-Young Lee, and Dr. Soonkyu Chung highlighting the most recent and trending research in nutritional sciences.

On Friday, Agriculture Session (chaired by Dr. Sung Woo Kim) had 5 esteemed talks by Dr. Gwangseok Yoon, Dr. Young Min Kwon, Dr. Hyunjun Choi, Dr. Yong-Su Jin, and Dr. Sung Woo Kim highlighting the recent trends and important topics in agricultural sciences. Poster Session (chaired by Dr. Yong-Su Jin) followed and hosted 10 poster presentations.

On Saturday, Food Session (chaired by Dr. Jooyeoun Jung) hosted 6 esteemed talks by Dr. Yeonhwa Park, Dr. Kwang Cheol Jeong, Dr. Seonghee Lee, Dr. Jihye An, Dr. Si-Hong Park, and Dr. Jooyeoun Jung) highlighting the most recent and key topics in food sciences.

Chair



Sung Woo Kim

North Carolina State University

Co-chairs



Jooyeoun Jung

Oregon State University



Soonkyu Chung

University of Massachusetts Amherst

Agriculture, Food & Nutrition

@ Congressional A

Thursday, Aug 6 5:00 – 6:45pm

Nutrition Session

Chair: Soonkyu Chung (University of Massachusetts Amherst)

Time	Title and Speaker
5:00	**Welcome and introduction** Sung Woo Kim (AFN chair, North Carolina State University)
5:05	**Welcome** Soonkyu Chung (Nutrition Session Chair, University of Massachusetts Amherst)
5:10	**Obesity-induced epigenetic dysregulation of hypothalamic leptin signaling** Min-Hyun Kim (Arizona State University)
5:25	**Developing and evaluating a social media intervention to promote locally grown fruit and vegetable consumption among college students** Seung Eun Jung (Cluster invited speaker, University of Alabama)
5:45	**Toward precision zinc nutrition: from genetic regulation to aging-associated zinc dyshomeostasis** Sangyong Choi (University of Connecticut)
6:00	**Development and validation of an ai-generated food-as-medicine recipe platform** Heewon L. Gray (University of South Florida)
6:15	**The effect of US-grown Teff (Eragrostis Tef) consumption on obesity-associated metabolic dysfunction in mice** Ji-Young Lee (University of Connecticut)
6:30	**Repeated weight cycling disrupts hypothalamic neuroendocrine signaling through gut microbiota remodeling** Soonkyu Chung (University of Massachusetts Amherst)

Agriculture, Food & Nutrition

@ Congressional A

Friday, Aug 7 3:15 – 5:00pm

Agriculture session

Chair: Sung Woo Kim (North Carolina State University)

Time	Title and Speaker
3:15	**Welcome** Sung Woo Kim (AFN chair, North Carolina State University)
3:20	**Temperature-dependent energy allocation drives growth and storage trade-offs in juvenile black sea bass** Gwangseok Yoon (University of New England)
3:40	**A novel DNA-based vaccine for reduction of Salmonella in broilers** Young Min Kwon (Cluster invited speaker; University of Arkansas)

Agriculture, Food & Nutrition

@ Congressional A

Friday, Aug 7 3:15 – 5:00pm

Agriculture session

Chair: Sung Woo Kim (North Carolina State University)

Time	Title and Speaker
4:00	**Roles of non-starch polysaccharide degrading enzymes to mitigate non-starch polysaccharide interference with intestinal health in pigs** Hyunjun Choi (North Carolina State University)
4:20	**From genome editing to adaptive evolution: engineering yeast for better fermented foods** Yong-Su Jin (University of Illinois)
4:40	**Milk oligosaccharides for mucosal microbiota and mucosa immunity in the jejunum of young pigs post-weaning** Sung Woo Kim (North Carolina State University)

Agriculture, Food & Nutrition

@ Congressional A

Saturday, Aug 8 8:00 – 10:00am

Food Session

Chair: Jooyeoun Jung (Oregon State University)

Time	Title and Speaker
8:00	**Welcome** Jooyeoun Jung (Food Session Chair; Oregon State University)
8:05	**Kahweol, a diterpene found in coffee, reduces fat accumulation and extends lifespan in Caenorhabditis elegans** Yeonhwa Park (Cluster invited speaker; University of Massachusetts Amherst)
8:25	**Identification of host-associated genomic features in Salmonella enterica serovar Dublin using machine learning** Kwang Cheol Jeong (University of Florida)
8:45	**Dynamic remodeling of DNA methylation during fruit ripening in octoploid strawberry** Seonghee Lee (University of Florida)
9:05	**Effect of processing and cooking conditions on chicken aroma characteristics evaluated by instrumental and consumer evaluation** Jihye An (Auburn University)
9:25	**Development of AI and omics-based quantitative PCR (qPCR) assay for food safety and quality** Si-Hong Park (Oregon State University)
9:45	**Upcycling agri-food biowastes into functional fibers for sustainable molded pulp packaging** Jooyeoun Jung (Oregon State University)

Poster Session

@ International Ballroom II

Friday, Aug 7 5:00 – 6:45pm

Agriculture, Food & Nutrition Poster Session
Chair: Yong-Su Jin (University of Illinois)

P1	**Development and evaluation of a bench-scale flume washer for ozone micro-nano bubble washing of fresh produce** Haknyeong Hong (University of California Davis)
P2	**Blue light treatment of whole avocados to inactivate Listeria monocytogenes and Salmonella enterica on their exocarp surfaces** Minji Hur (University of Georgia)
P3	**Comparative evaluation of expert and AI greenhouse climate control for winter strawberry cultivation** Yuseok Jeong (National Institute of Agricultural Sciences)
P4	**Development of an end-effector system for apple harvesting using modular design and a custom PCB** Sang-Hyeon Kang (Rural Development Administration)
P5	**Haplotype-resolved genome assembly of strawberry cultivars Florida Encore and Florida Ember** Jaejoon Lee (University of Florida)
P6	**Exploring drought adaptation mechanisms in soybean genotypes: A pathway-based metabolomics approach** Namhee Lee (University of Georgia)
P7	**Anti-proliferative properties of Humulus lupulus (hops) flavonoids in human colorectal cancer cells** Seong-Ho Lee (University of Maryland)
P8	**Hemp seed attenuates colon tumorigenesis and immune responses in colitis-associated colorectal cancer mouse** Jieun Woo (Purdue University)
P9	**Effect of thermal processing on nutritional and quality parameters of grape juice** Moonsun Yang (Wilberforce University)
P10	**A protective effect of aged parsnip extract on diet-induced metabolic dysfunction-associated steatotic liver disease (MASLD) in vivo** Tongkewn Yoo (Purdue University)
P11	**Autonomous ground robotics for precision strawberry production in Florida** Daeun Choi (University of Florida)



Opening



Speakers of Nutrition Session



Group photo after Agriculture Session



Group photo after Food Session

In addition to the Cluster Sessions, on Friday, the AFN Cluster co-hosted the RDA Forum chaired by Dr. Sung Woo Kim and Dr. Kuk-Hwan Seol. Dr. Je Hoon Sung, the Director General of the National Institute of Agricultural Sciences, Rural Development Administration opened the forum followed by 4 invited speakers including Dr. Jin Kyung Kwon, Dr. Sung Woo Kim, Dr. Chung Geon Lee, and Dr. Adegbola Adesogan highlighting the recent advances in renewable energy and environmental sustainability in agriculture.



Opening remarks by Dr. Je Hoon Sung

Biology, Biotechnology & Health 1

Dedicated to advancing human health and life sciences, this cluster covers cutting-edge research in biotechnology, biomedical sciences, medical technologies, and translational medicine shaping the future of healthcare.

The Biology, Biotechnology & Health Technical Symposium will feature four podium sessions and a poster session. We invite scientists, engineers, and professionals from academia, industry, and government to share their work, foster collaboration, and address critical challenges in life sciences and healthcare, while engaging researchers from related fields—including information science, nanotechnology, advanced materials, and robotics—to advance interdisciplinary innovation in health and biotechnology.

This symposium is jointly organized by three Technical Groups (TGs) of KSEA and their affiliated professional societies (APS): Health Sciences; Biological and Biomedical Sciences; and Bioengineering and Biomedical Engineering.

The Health Sciences TG (B-1 MPS) brings together members working in medical science, veterinary medicine, pharmaceutical science, public health, nursing, and related fields, with shared interests in improving human and animal health, advancing clinical and translational research, and addressing emerging challenges in healthcare systems and biomedical practice.

The Biological and Biomedical Sciences TG (B-3 BME) is a community of members working in biology, molecular biology, cognitive science, botany, zoology, biomechanics, and related fields, with shared interests in understanding living systems across scales, advancing fundamental and translational bioscience, and addressing emerging challenges at the intersection of biology, health, and technology.

The Bioengineering and Biomedical Engineering TG (C-1 BME) includes members working in bioengineering, biomedical engineering, and related fields, with shared interests in applying engineering principles to biological systems, advancing medical technologies and devices, and addressing emerging challenges in healthcare, diagnostics, and human performance.

Chair



Bong-Ihn Koh (B3)

Yale University

Co-chairs



Soo Jin Yoo (B1)

The University of Texas Rio Grande Valley



Hungoo Lee (B1)

Johns Hopkins University

B-1 Symposium: Medical, Pharmaceutical, and Physical Education Sciences (MPS)

From Discovery to Practice in Health Sciences

The Medical, Pharmaceutical, and Physical Education Sciences Symposium brings together scholars, clinicians, and practitioners from diverse disciplines—including medical science, veterinary medicine, pharmaceutical science, public health, nursing, and related fields—who share a common commitment to advancing health and well-being for both humans and animals. This interdisciplinary forum fosters collaboration and knowledge exchange aimed at strengthening clinical and translational research, promoting innovative therapeutic and preventive strategies, and addressing emerging challenges in healthcare systems and biomedical practice. By integrating expertise across sectors, the symposium highlights the critical importance of cross-disciplinary approaches in tackling complex health issues, improving patient outcomes, and shaping the future of global health.

B-3 Symposium: Biological and Biomedical Sciences (BME)

Reading the Niche: How Cells Sense and Respond Across Tissues

How do cells read their environment — and how do those responses scale into tissue function, organ physiology, and disease? This question sits at the heart of the most exciting work in modern biomedicine, cutting across vascular biology, neuroscience, and stem cell biology. In this session, featured talks illuminate how hemodynamic forces reprogram endothelial identity in atherosclerosis, how ultrasound mobilizes mechanosensory responses in immune cells, how skeletal stem cell heterogeneity is regulated within the perivascular niche during aging, how synaptic connectivity encodes neurotransmitter identity in whole-brain connectomes, how translational kinetics shape proteome integrity in the aging brain, and how human organoids recapitulate the developmental program of the amygdala. Together, they reveal that cell fate is not intrinsic but relational, shaped continuously by the mechanical, molecular, and architectural context of the niche.

Biology, Biotechnology & Health 1

@International Ballroom II

Thursday, Aug 6 5:00 – 7:00pm

B-1 Session I: Innovative Diagnostic and Molecular Approaches to Cancer and Disease Detection
Chair: Jihyun Song (University of Utah)

Time	Title and Speaker
5:00	**Differentially methylated genes in aggressive prostate cancer** Jong Yun Park (Moffitt Cancer Center & Research Institute) **Invited**
5:25	**Artificial Intelligence for Comparative Oncology: Modeling Rare Cancers Using Naturally Occurring Canine Cancers** Jong Hyuk Kim (University of Florida)
5:50	**Plasma-based single extracellular vesicle analysis for diagnosis of cholangiocarcinoma** Mi Ho Jeong (Mass General Brigham) **Invited**
6:15	**VASP, a F-actin polymerization factor, is a novel YAP-TEAD target gene in MDA-MB-231 cells** Tae-Hyung Kim (University of New Mexico Health Sciences Center)
6:40	**Activated Transient Receptor Potential Vanilloid Type 1 (TRPV1) endures global hypoperfusion following subarachnoid Hemorrhage (SAH)** Sung Ha Hong (University of Rochester Medical Center) **Invited**

Biology, Biotechnology & Health 1

@Olympic A, B

Thursday, Aug 6 5:00 – 7:00pm

B-3 Session I: Reading the Niche: How Cells Sense and Respond Across Tissues
Chair: Bong Ihn Koh (Yale School of Medicine)

Time	Title and Speaker
5:00	**Ultrasound-induced Macrophage Mechanotransduction via Actin Reorganization and Ca^{2+} Responses** Myeong Ryeol Choi (Pohang University of Science and Technology)
5:30	**Flow-Induced Reprogramming of Endothelial Cells (FIRE) in Atherosclerosis** Hanjoong Jo (Emory University/Georgia Institute of Technology)
6:00	**Skeletal Stem Cell Heterogeneity and Regulatory Mechanism in Aging** Dongsu Park (Baylor College of Medicine)
6:30	**Human Amygdala-like Telencephalic Organoids Capture Developmental Program of Human Amygdala** In-Hyun Park (Yale University)

Biology, Biotechnology & Health 1

@Colonial B

Friday, Aug 7 3:15 – 5:00pm

B-1 Session II: Innovative Diagnostic and Regenerative Therapies for Musculoskeletal Disease

Chair: Whasil Lee (University of Rochester, NY)

Time	Title and Speaker
3:15	**Can Cone Beam Computed Tomography Assess Oral Bone Density?** Do-Gyoon Kim (Ohio State University) **Invited**
3:40	**Vitamin E Nanosome Pretreatment Enhances Stem Cell Survival and Therapeutic Efficacy in a Post-Traumatic Osteoarthritis Mouse Model** Hongsik Jake Cho (University of Tennessee Health Science Center)
4:00	**Engineered 3D Microphysiological Systems for Identification of Therapeutic Myokines** Young Charles Jang (Emory University)
4:20	**Development of Antibody-Immobilized Electrodes to Detect Osteocalcin for Racehorse Bone Health Monitoring** Daniel Sim (University of Tennessee)

Biology, Biotechnology & Health 1

@Colonial B

Saturday, Aug 8 8:00 – 10:00am

MPS/BME Joint Session: Multiscale Perspectives on Neural Function, Aging, and Human Health

Chair: Bong Ihn Koh (Yale School of Medicine); Soojin Yoo (U Texas Rio Grande Valley)

Time	Title and Speaker
8:00	**Altered translation elongation contributes to key hallmarks of aging** Jae Ho Lee (Stony Brook University)
8:30	**Predicting Neurotransmitter Identity from Synaptic Connectivity in Drosophila Connectomes** Hyunju Kim (Georgia Institute of Technology)
9:00	**Nociceptic Nerve Remodeling in Osteoarthritic Mouse Knee Joints** Whasil Lee (University of Rochester)
9:20	**Effect of Aymara Enriched NFKB1 SNP on Acute Mountain Sickness in Austrians Exposed to Acute Hypoxia** Grace Min (University of Utah)

Poster Session

@ International Ballroom II

Friday, Aug 7 5:00 – 6:45pm

B-1 Poster Session

Chair: Soojin Yoo (U Texas Rio Grande Valley); Hungoo Lee (Johns Hopkins University)

P1	**Algorithmic Fairness in Machine Learning Prediction for Long-Term Adjuvant Endocrine Therapy Adherence among Breast Cancer Survivors** Yeijin Kim (University of Texas at Austin)
P2	**Effects of Long-Term Episodic Heat Therapy on Skeletal Muscle Morphology and Capillarization in Aged Obese Mice** Bohyun Ro (Purdue University)
P3	**Clonal Convergence Between Mucosal and Systemic Human IgA Repertoires Following Norovirus Challenge** Dae Sung Kim (University of Texas at Austin)
P4	**Integrating PharmD-Informed Medication Literacy into Diabetes Self-Management Education and Support (DSMES) Programs to Address Polypharmacy in Type II Diabetes** Lucy Lee (UTHealth School of Public Health)
P5	**The Relationship Between Depression and Inflammatory Markers in Head and Neck Cancer Patients Undergoing Radiation Therapy** Hyein Kim (Emory University)

Poster Session

@ International Ballroom II

Friday, Aug 7 5:00 – 6:45pm

B-1 Poster Session

Chair: Soojin Yoo (U Texas Rio Grande Valley); Hungoo Lee (Johns Hopkins University)

P6	**Exogenous mitochondrial transplantation improves tendon regeneration via modulating apoptosis signaling** Jimin Lee (Colorado State University)
P7	**Functional Connectome Alterations Underlying Posttraumatic Stress Disorder** Eun Namgung (Texas A&M University Health Science Center)
P8	**Household Living Arrangement, Obesity, and Psychosocial Risk Across the U.S.** Ilsoo Park (Azusa Pacific University)
P9	**Associations Between Greenspace Exposure and Cancer Outcomes in the U.S.** Jeonggyo Yoon (University of Arizona)
P10	**Early-Life Adversity Alters the Neuro–Immune Axis and Limits Anti–PD-1 Therapy** Yea In Park (George Washington University)
P11	**Comparative Evaluation of Cryogen Spray Cooling (R134a vs HFO-1234ze)** Yurie Jeong (UC Irvine / Johns Hopkins University)
P12	**Identifying the Epigenetic Mechanisms of Fragile X syndrome and Inducing the Contraction of CGG repeats and FMR1 reactivation** Hungoo Lee (Johns Hopkins University)
P13	**BMI Masks Significant Differences in Metabolic Risk Indicators** Soojin Yoo (University Texas Rio Grande Valley)
P14	**A study on early detection of mild cognitive impairment (MCI) in older Korean adults using daily speech and EEG data** Youngjin Park (Korea Electrotechnology Research Institute)
P15	**Capacitive Sensors for Non-invasive Monitoring of Vital Signs in Small Animals** Kwang Choi (Uniformed Services University)
P16	**Electrochemical Detection of Respiratory Viruses Using a Nanowell Biosensor Platform** HeaYeon Lee (MARA Nanotech New York Inc.)
P17	**Mass-produced Nanowell Biosensor for Clinical COVID-19 Diagnosis** HeaYeon Lee KA(MARA Nanotech New York Inc.)

Poster Session

@ International Ballroom II

Friday, Aug 7 5:00 – 6:45pm

B-3 Poster Session
Chair: In-Hyun Park (Yale University)

P1	**Hippocampal α-Synuclein PFF mouse model recapitulates key pathological and cognitive features of Lewy Body Dementia** Jung Ha Byun (University of Georgia)
P2	**Multi-Omic Characterization of the Senescent Niche in Aging Skin** Yeaeun Han (Mayo Clinic)
P3	**Biomimetic Intrafibrillar Mineralization of Collagen** Hoyeon Jang (The Ohio State University)
P4	**Causal interrogation of bipolar disorder GWAS risk genes: cell- and circuit-targeted in vivo CRISPR editing at single and multiple loci** Yeonha Ju (University of Texas at Austin)
P5	**Bridging Functional Annotation and Molecular Interactions: Trustworthy Deep Learning for Enzyme and Protein-Compound Prediction** Mingon Kang (University of Nevada Las Vegas)
P6	**Endothelial tmTNFα as a Regulator of Immune-Related Networks and Schizophrenia-Relevant Phenotypes** Sanghyeon Kim (SMRI)
P7	**Gene–Diet Interactions in Alzheimer's Disease: APOE4 Rewires Astrocytic Ketone Metabolism to Drive Amyloid Pathology** Youbin Kim (Icahn School of Medicine at Mount Sinai)
P8	**Probing the paradoxical relationship between marine diazotrophs and oxygen through controlled hypoxia** Michael Kim (Johns Hopkins University, University of Southern California)
P9	**Functional Specialization of Craniofacial Bone Marrow Vasculature** Bong Ihn Koh (Yale School of Medicine)
P10	**Therapeutic Potential of Graphene Quantum Dots on Pterygium** Donghoon Koo (Seoul National University)
P11	**A Counterfactual Framework for Estimating Infectious Disease Prevalence under Repeated Testing with Symptomatic and Contact-Tracing Components** Jeongjin Lee (The Ohio State University)

Poster Session

@ International Ballroom II

Friday, Aug 7 5:00 – 6:45pm

B-3 Poster Session
Chair: In-Hyun Park (Yale University)

P12	**Mitochondrial Dysfunction Induces Asparaginase Resistance in R-Spondin Fusion Colorectal Cancer** Su Hyun Lee (St. Jude Children's Research Hospital)
P13	**The role of KAZN in osteoclastogenesis** Sun Young Lee (Sookmyung Women's University)
P14	**Remote Ischemic Conditioning Rescues Delayed Transneuronal Degeneration and Promotes Long-Term Stroke Recovery** Keun Woo Park (Bergen Community College)
P15	**Epigenetic Memory Drives Fetal-like Revival Stem Cell Identity During Small Intestine Regeneration** Onyu Shin (Center for Genome Engineering, Institute for Basic Science (IBS), Korea)
P16	**Foot Placement as a Mediolateral Balance Control Strategy in an Avian Bipedal Animal Model During Sloped Perturbations** Junhyuck Woo (University of California, Irvine)
P17	**The Effects of Exercise Training on Anxiety and Insular-Centered Functional Connectivity in Healthy Older Adults** Kihoon Yuk (Program in Neuroscience and Cognitive Science, University of Maryland)
P18	**Biotechnology & Health Wearable Catalytic Graphene Sensor for Longitudinal Salivary Cortisol and Stress Monitoring** Jimin Lee (Georgia Institute of Technology)
P19	**Structural Studies of the Outer Surface Protein A (OspA) membrane lipoprotein from the Lyme disease agent Borrelia burgdorferi** Najin Kim (Arizona State University)
P20	**Biotechnology & HealthRole of Self-Assembled Water Chains in Enzymatic Reactions** Byung Kim (Boise State University)
P21	**Cytoprotective Effect of Kartogenin-Loaded Nanosomes on Arthritic Chondrocytes** Hongsik Cho (University of Tennessee Health Science Center)
P22	**A Bayesian Cross-Classified Multilevel Analysis of Healthcare Access Effects on SPD by Occupation and Industry for Workplace CDSS** Dayeon Heo (Purdue University)

1. Symposium Summary

B-1 Session I: Innovative Diagnostics and Molecular Approaches to Cancer and Disease Detection

This session was chaired by Jihyun Song (University of Utah) and featured 5 speakers (3 invited speakers). The session largely focused on cancer, with subtopics ranging from epigenetics, artificial intelligence (AI) modeling, multi-modal diagnostics and cytoskeletal dynamics; there was also a talk on subarachnoid hemorrhage. The talks were quite engaging and each speaker fielded multiple questions from the audience, fostering active discussion on the innovative approaches to disease diagnostics and treatment.



B-3 Session I: Reading the Niche: How Cells Sense and Respond Across

This session was chaired by Bong Ihn Koh (Yale School of Medicine) and featured 4 speakers (2 invited speakers). The session covered a variety of topics – mechanotransduction, atherosclerosis, skeletal stem cells and brain organoids – with a central theme of multicellular interaction in specialized tissue microenvironments. The presentations were very insightful and inspired many critical questions/comments from the audience.



B-1 Session II: Innovative Diagnostics and Regenerative Therapies for Musculoskeletal Disease

This session was chaired by Whasil Lee (University of Rochester) and featured 4 speakers (1 invited speaker). Fascinating presentations were given on the topic of musculoskeletal disease, covering creative diagnostic imaging, screening approaches and therapeutic modalities. Again, lively discussions between speakers and audience members took place, fostering the exchange of creative ideas and collaboration.



Poster Session

B-1 (Chairs: Soojin Yoo (U Texas Rio Grande Valley) and Hungoo Lee (Johns Hopkins University)) and B-3 (Chair: In-Hyun Park (Yale University)) Poster Sessions featured 38 posters on a wide range of topics in biology, biotechnology and health.

MPS/BME Joint Session: Multiscale Perspectives on Neural Function, Aging, and Human Health

This session was co-chaired by Bong Ihn Koh (Yale School of Medicine) and Soojin Yoo (U Texas Rio Grande Valley) and featured 5 speakers. Unfortunately, speaker Hyunju Kim could not attend the conference due to an unexpected flight cancellation; co-chair Bong Ihn Koh stepped in to fill her presentation slot. Aging was a predominant theme of the presentations, which covered protein translation, craniofacial bone marrow, osteoarthritis, hypoxia and multiple myeloma. This final joint session provided a wonderful platform for fruitful exchange of multidisciplinary perspectives and collaborative discussion.



Biology, Biotechnology & Health 2

As in any other major industry, problem solving in modern medicine increasingly requires a true convergence of many scientific and engineering fields. While some of the last frontiers of biomedicine, such as neuroscience and regenerative medicine, critically demands new ideas and tools from other disciplines, paradigm-shifting technological innovations in information science, nanotechnology, and robotics could open new opportunities in healthcare. At the same time, a new generation of engineers, "fluent" in many different languages of science, are creating entirely new fields to view the old questions with a fresh look. In the BME symposium, we strive to provide a stimulating forum for all researchers willing to go beyond the "comfort zone" to explore new opportunities in biomedical engineering.

Chair



James Moon

University of Michigan

Co-chairs



Chun Gwon Park

Sungkyunkwan University



Youngjae Chun

University of Pittsburgh



Jung Soo Suk

University of Maryland

Biology, Biotechnology & Health 2

@ Olympic A, B

Friday, Aug 7 3:15 – 5:00pm

BME Session I: Biomaterials, Immunotherapy, and Drug Delivery

Chairs: Jungho Ahn (Sungkyunkwan University), Sangyoon J. Han (Michigan Tech)

Time	Title and Speaker
3:15	**Translational Research for Female Reproductive System** Jungho Ahn (Sungkyunkwan University) **Invited**
3:35	**Evidence for Collective NK Cell Surveillance Revealed by Causal Network Analysis in Tumor-on-a-Chip Models** **Invited** Sangyoon J. Han (Michigan Technological University)
3:55	**Heart dECM Hydrogel Facilitates Structural Maturation and Functional Stability of Human Cardiac Organoids** Jaemyung Shin (Johns Hopkins University)
4:10	**Development of Inducible Stable Cell Lines for rAAV Production: From Packaging to Producer Cell Line** Seongkyu Yoon (University of Massachusetts Lowell)
4:25	**Systems Mechanobiology Approaches to Fibrosis Resolution and Cardiac Repair** Yoonyoung Choi (University of Massachusetts Lowell)
4:40	**Self-aggregating Long-acting Injectable Microcrystals (SLIM): A Versatile Platform** Sanghyun Park (Massachusetts Institute of Technology)

Biology, Biotechnology & Health 2

@ Olympic A, B

Saturday, Aug 8 8:00 – 10:00am

BME Session II: Bioelectronics and Medical Devices

Chairs: Byulee Park (Sungkyunkwan University), Soojung Claire Hur (Johns Hopkins University)

Time	Title and Speaker
8:20	**Multiscale Photoacoustic Imaging: From Nanostructures to Human Tissues I** Byullee Park (Sungkyunkwan University) **Invited**
8:40	**Toward Genetic Manipulation of Patient-Derived Circulating Tumor Cells Using Integrated Microfluidic Electroporation** **Invited** Soojung Claire Hur (Johns Hopkins University)
8:55	**A Synergistic Hybrid Bioceramic for Structural Reinforcement and Bioelectric Stimulation for Smart Implants** Albert Kim (University of South Florida)
9:10	**Multiplexed Microfluidics Decodes Antibiotic Combination and Sequence Effects** Yoon Jeong (University of Chicago)
9:25	**A Wireless Wearable Monitoring System with a Smart Mouthguard and Soft Chest Patches for Dehydration and Health Monitoring of Athletes** Karam Kim (Georgia Institute of Technology)
9:40	**Clinically Translatable Arthroscopic Instrument Stabilization Interface with Defined Regulatory Pathway** Sang-Eun Song (The University of Akron)

Poster Session

@ International Ballroom II

Friday, Aug 7 5:00 – 6:45pm

BME Poster Session

Chairs: TBD

P1	**A Nanoemulsion-Based TLR7/8 Adjuvant Platform for Coordinated Immune Activation Against Diverse Viral Threats** JuA Song (Sungkyunkwan University)
P2	**Integrated spatial multi-omics identifies TRPS1 as a regulator of joint cell fate linking cartilage development to osteoarthritis** Ji-Hye Yea (Johns Hopkins University)
P3	**Assessing the Role of GAN-Based Synthetic Data in Cell Microscopy Classification under Limited Data Conditions** So-yun Park (Kumoh National Institute of Technology)
P4	**A Rat Glioma Spheroid-Neural Cell Tri-Culture Model to Investigate Cellular Crosstalk in Glioma Pathology** Testaverde Sangwoo Kim (University of California, Davis)
P5	**Rootin: A Mobile Symptom Tracking and Self-Care App for Women with Breast Cancer on Aromatase Inhibitors** Soyeon Lee (University of Connecticut)
P6	**Dual-Responsive Gelatin Microspheres for Ultrasound-Regulated Enzyme-Mediated Drug Release in Cancer Therapy** Yuri Kang (Pohang University of Science and Technology)
P7	**Flexible, Three-Dimensional Electronic Framework for Electromechanical Monitoring in Engineered Heart Tissues** Hayeon Yun (Northwestern University)
P8	**Soft Wearable BW-NIRS for Monitoring Sleep-Dependent Brain Water Dynamics** Seunghyeb Ban (Georgia Institute of Technology)
P9	**A 3D Brain Geometry Toolkit for Scalable Multisite Vertex-wise Brain Morphometry Analysis** Yanghee Im (University of Southern California)
P10	**Multiscale Biointerfaces for Neuromodulation: Access, Targeting, Modeling, and Sensing** Eunji Hong (Binghamton University)
P11	**A Minimally Invasive Magnetically Actuated Intravesical Occlusion Device for Urinary Incontinence** Youngjae Chun (University of Pittsburgh)
P12	**Microfluidic and Machine Learning–Guided Fabrication of Sub-5 μm PLGA Microparticles with Adhesive Integration for Vascular Drug Delivery** Youngjae Chun (University of Pittsburgh)
P13	**Soft Wearable NIRS for Monitoring Cardiac, Respiratory, and Slow-Oscillation Rhythms during Sleep** Junwoo Kwon (Cornell University)

Poster Session

@ International Ballroom II

Friday, Aug 7 5:00 – 6:45pm

BME Poster Session
Chairs: TBD

P14	**Biophysical control of cell density promotes stem cell retention and tissue healing** Gwang-Bum Im (Boston Children's Hospital, Harvard Medical School)
P15	**Reactive Oxygen Species, Electrode Potential and pH Affect CoCrMo Alloy Corrosion and Semiconducting Behavior in Simulated Inflammatory Environments** Hwaran Lee (Clemson University)
P16	**Large Language Model and Human Performance on a Motor Sequence Learning Task** Hakjoo Kim (McLean Hospital, Harvard Medical School)
P17	**Comparative Analysis of Flexible Electrode Designs** Jong-Hoon Kim (Washington State University)
P18	**Capacitive Sensors for Non-invasive Monitoring of Vital Signs in Small Animals** Kwang Choi (Uniformed Services University)
P19	**Assessing the Role of GAN-Based Synthetic Data in Cell Microscopy Classification under Limited Data Conditions** Se-woon Choe (Kumoh National Institute of Technology)
P20	**The Effects of Copper Availability on Ethane Oxidation by Obligate Methanotrophs** Jaeho Choi (KAIST)
P21	**Coupling Mechanistic Lyophilization Models with a Multi-Agent AI Interrogation Engine for Autonomous Process Discovery** Saeyoung Kim (University Mass Lowell)
P22	**Bio-inspired zwitterion-treated silicone catheters reduce device-related complications in chronically catheterized patients** Min Kyu Lee (University of California, Los Angeles)
P23	**Real-Time Optical Control and Quantitative Imaging of Cellular Responses** Seohee Ma (Purdue University)
P24	**A study on early detection of mild cognitive impairment (MCI) in older Korean adults using daily speech and EEG data** YoungJin Park (Korea Electrotehcnology Research Institute)
P25	**All-in-One Wearable Bioelectronics for a Continuous Assessment and Early Diagnosis of Acute Kidney Injury** W. Hong Yeo (Georgia Tech)
P26	**Cytoprotective Effect of Kartogenin-Loaded Nanosomes on Arthritic Chondrocytes** Ryan Qiu (University of Tennessee Health Science Center)
P27	**Computational modeling of durotactic cell migration** Donghyun Yim (Purdue University)

Poster Session

@ International Ballroom II

Friday, Aug 7 5:00 – 6:45pm

BME Poster Session
Chairs: TBD

P28	**Capacitive Sensors for Non-invasive Monitoring of Vital Signs in Small Animals** Ethan Reyes (The Geneva Foundation)
P29	**Beyond Adhesion: Stress-Dissipating Interface for Soft-Rigid Polymer Integration in Biomedical and Robotic Systems** Choi, Yurim (Department of Materials Science and Engineering, Pohang University of Science and Technology (POSTECH))
P30	**Gene-Diet Interactions in Alzheimer's Disease: APOE4 Rewires Astrocytic Ketone Metabolism to Drive Amyloid Pathology** Kim, Youbin (Icahn School of Medicine at Mount Sinai)
P31	**Mitochondrial Dysfunction Induces Asparaginase Resistance in R-Spondin Fusion Colorectal Cancer** Lee, Su Hyun (St.Jude Children's Research Hospital)

1. Symposium Summary

The 2026 BME Symposium consisted of two podium oral sessions and one poster session. A total of 12 speakers were scheduled for the two oral sessions, with six presentations in each session.

In ***BME Session I: Biomaterials, Immunotherapy, and Drug Delivery***, held on Friday, August 7, the session chairs were Dr. Jungho Ahn (Sungkyunkwan University) and Dr. Sangyoon J. Han (Michigan Technological University). The invited speakers were Dr. Jungho Ahn, who presented Translational Research for Female Reproductive System, and Dr. Sangyoon J. Han, who presented Evidence for Collective NK Cell Surveillance Revealed by Causal Network Analysis in Tumor-on-a-Chip Models. Other presenters included Dr. Jaemyung Shin (Johns Hopkins University), Dr. Seongkyu Yoon (University of Massachusetts Lowell), Dr. Yoonyoung Choi (University of Massachusetts Lowell), and Dr. Sanghyun Park (Massachusetts Institute of Technology).

BME Session II: Bioelectronics and Medical Devices, held on Saturday, August 8, was chaired by Dr. Byullee Park (Sungkyunkwan University) and Dr. Soojung Claire Hur (Johns Hopkins University). The invited speakers were Dr. Byullee Park, who presented Multiscale Photoacoustic Imaging: From Nanostructures to Human Tissues, and Dr. Soojung Claire Hur, who presented Toward Genetic Manipulation of Patient-Derived Circulating Tumor Cells Using Integrated Microfluidic Electroporation. Other presenters included Dr. Albert Kim (University of South Florida), Dr. Yoon Jeong (University of Chicago), Dr. Karam Kim (Georgia Institute of Technology), and Dr. Sang-Eun Song (The University of Akron).

The ***BME Poster Session*** took place on Friday, August 7, from 5:00–6:45 PM in International Ballroom II. The session chairs were Dr. Jung Soo Suk (University of Maryland School of Medicine) and Dr. Youngjae Chun (University of Pittsburgh). A total of 22 posters were included in the BME poster program, covering a broad range of topics including biomaterials, drug delivery, cancer therapy, tissue engineering, bioelectronics, wearable technologies, microfluidics, artificial intelligence and machine learning, and computational biomedical engineering.

2. Future Directions

For future UKC meetings, the BME symposium will continue to be organized through close coordination among the track chair, co-chairs, and session chairs. The number and scientific focus of the sessions will be determined based on the overall conference program, emerging areas in biomedical engineering, and the interests of participating researchers.

Future sessions will continue to bring together investigators from Korea and the United States across diverse areas of biomedical engineering, including biomaterials, immunotherapy, drug delivery, bioelectronics, medical devices, tissue engineering, and computational approaches. Particular emphasis will be placed on inviting established and emerging leaders in the field while also providing opportunities for junior investigators and trainees to present their work.

The primary objective of the BME symposium will remain to provide a stimulating scientific forum that promotes exchange of new ideas, meaningful discussion, networking, and development of new collaborations among researchers working at the interface of engineering, biology, and medicine.

3. Group photo



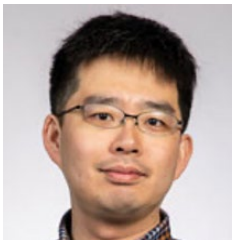
1. Symposium Description

The Energy, Materials & Resources Technical Symposium brought together researchers and professionals working on next-generation energy systems, advanced materials, and sustainable resource technologies that support the global energy transition and industrial innovation. The symposium provided a multidisciplinary forum for experimental, computational, and integrated research spanning chemical engineering, materials science, nanotechnology, advanced manufacturing, energy systems, and related engineering fields.

The program consisted of three podium sessions and one poster session. Technical presentations addressed a broad range of emerging topics, including hydrogen production, catalysis, sustainable separations, fusion energy, functional and nanostructured materials, photonic and electronic devices, additive manufacturing, thermal management, advanced energy storage, resource recovery, environmental technologies, and data-driven engineering approaches. Collectively, these sessions highlighted fundamental scientific advances and practical technologies relevant to sustainable energy, materials innovation, and resource management.

The symposium was jointly organized by the Chemical, Textile, Energy, and Nuclear Engineering Technical Group (C-2 CHE) and the Materials Science and Engineering, Nanotechnology Technical Group (C-4 MSE). Contributions from the Mechanical, Aerospace, and Naval Engineering (C-3 MAN); Civil and Environmental Engineering and Architecture (C-5 CEA); Computer and Information Sciences (C-7 CIT); and Industrial, Manufacturing, and Systems Engineering (C-8 IMD) Technical Groups further broadened the program. This interdisciplinary structure encouraged exchanges across traditionally distinct fields and supported new research connections among participants from academia, research institutions, and industry.

Chair



Jaewon Lee (C2)

University of Missouri - Columbia

Co-chairs



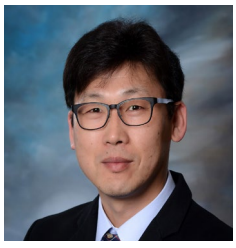
Inseok Chae (C2)

Texas Tech University



Sungwoo Nam (C4)

University of California, Irvine



Hyun-Tae Hwang (C2)

University of Kentucky

Energy, Materials & Resources

@Congressional B

Thursday, Aug 6 5:00 – 6:45pm

CHE Session: Hydrogen, Catalysis, and Sustainable Energy

Chair: Jaewon Lee (University of Missouri-Columbia), Inseok Chae (Texas Tech University), Sungwoo Nam (University of California, Irvine), Hyun-Tae Hwang (University of Kentucky)

Time	Title and Speaker
5:00	**Vapor Pressure Suppression of Hydrocarbons under Nanoconfinement Revealed by Differential Scanning Calorimetry** Hyeyoung Cho (Florida Polytechnic University)
5:12	**Korea's Path to Fusion Energy: Progress and Strategic Vision** Yeongkook Oh (Korea Institute of Fusion Energy)
5:24	**Optimization of Surfactant-Imbibition In-situ DNAPL Remediation with Horizontal Wells** Seung Ihl Kam (Louisiana State University)
5:36	**Sorp-Vection: A Non-Equilibrium Transport Platform for Complex Fluid Separations** Jinyoung Kim (Georgia Institute of Technology)
5:48	**Two-dimensional gas chromatography (GC×GC) Applications in Plastic Pyrolysis Research** Do Hyun Lee (Penn State University)
6:00	**A Semi-Markov Process Approach to Quantify Material Content Over Multiple Product Lifecycles with Application to a Hard Disk Drive** Yong Han Kim (Purdue University)
6:12	**Controlling Surface Cation Configurations in IrxRu1-xO2(110) and Their Effects on Adsorption** Jisu Shin (Purdue University)
6:24	**Balancing Dark Current and Photoresponse in Organic Photodetectors via Cleavable Side Chain Engineering** Seung Hyun Kim (University of North Carolina at Chapel Hill)
6:36	**Innovative Process Development for Natural Hydrogen as a primary energy source** Jihyun Hwang (Korea Institue of Energy Technology)
6:48	**Improved Hydrogen Yield and Safety in Solid-State Hydrolysis of Sodium Borohydride Using Water Adsorbents** Hyun-Tae Hwang (University of Kentucky)

Energy, Materials & Resources

@Congressional B

Friday, Aug 7 3:15 – 5:00pm

MSE Session: Advanced Manufacturing, Functional Materials, Nanomaterials
Chair: Jaewon Lee (University of Missouri-Columbia), Inseok Chae (Texas Tech University), Sungwoo Nam (University of California, Irvine), Hyun-Tae Hwang (University of Kentucky)

Time	Title and Speaker
3:15	**Novel Nanophotonic Devices based on Strong Light-Matter Interaction** Hong Gyu Park (Seoul National University)
3:27	**Fabrication of Textured pHEMA Hydrogels: The Impact of Micro/Nano Textures on Optical Property** Chang-Hwan Choi (Stevens Institute of Technology)
3:39	**Simulation Study of Mechanically Tunable Phononic Crystals: Effects of Scatterer Geometry and Material on Acoustic Band Gap Properties** Taeyul Choi (University of North Texas)
3:51	**Orientation-Dependent Residual Lattice Strain in Single-crystal Sapphire Cutting with Hard X-ray Nanoprobe** Sangkee Min (University of Wisconsin-Madison)
4:03	**Thermal Management Technologies for High-Thermal-Load Systems: Applications in Data Centers and Re-Entry Spacecraft** Tae Young Kim (Seoul National University of Science and Technology)
4:15	**Low-Cost Titanium Powder Design and in-situ Alloying Approach for Laser Powder Bed Fusion** Bin Lee (Kyung Hee University)
4:27	**Entanglements in Polymer Networks: A New Pathway for Soft Material Design** Junsoo Kim (Northwestern University)
4:39	**Purpose-Engineered Alloys for LPBF Additive Manufacturing: From Computational Alloy Design to Functional Component Demonstration** Yongho Sohn (University of Central Florida)

Energy, Materials & Resources

@Congressional B

Saturday, Aug 8 8:00 – 10:00am

CHE, MSE & CEA Session : Advanced Materials, Resources, Separations
Chair: Jaewon Lee (University of Missouri-Columbia), Inseok Chae (Texas Tech University), Sungwoo Nam (University of California, Irvine), Hyun-Tae Hwang (University of Kentucky)

Time	Title and Speaker
8:00	**Soft Piezoelectric-Powered Capacitive Sensor for High-Fidelity Vibration Detection** Jeng-Hun Lee (Georgia Institute of Technology)
8:12	**Plasticization-Driven Ionic Transport in AlBr3–Based Solid Electrolytes** Kyunghyun Kim (Hongik University)
8:24	**Materials and Devices for Event–Memory Bifurcation in Dynamic Vision** Won Il Park (Hanyang University)

Energy, Materials & Resources

@Congressional B

Saturday, Aug 8 8:00 – 10:00am

CHE, MSE & CEA Session : Advanced Materials, Resources, Separations
Chair: Jaewon Lee (University of Missouri-Columbia), Inseok Chae (Texas Tech University), Sungwoo Nam (University of California, Irvine), Hyun-Tae Hwang (University of Kentucky)

Time	Title and Speaker
8:36	**Highly Efficient Triboelectric Nanogenerator Based on Low Impedance and High Charge Density through Multi-Layer Design** JinKyeom Kim (University of Wisconsin-Madison)
8:48	**Effect of Hexagonal Boron Nitride Fillers on Ion Transport and Viscoelasticity of Vitrimer Electrolytes** Seongon Jang (University of Pennsylvania)
9:00	**Analysis of Cutting Force Characteristics in Ultra-Precision Milling of Single Crystal Sapphire** Jinho Park (Korea Aerospace University)
9:12	**Effectiveness of Low-Cost Window Fans for reducing Indoor Cooking Emissions Compared with Kitchen Hoods** Semi Park (University of Texas at Arlington)
9:24	**From Classroom to Community: Preparing Next-Generation Engineering Through Municipal Water Quality Projects** Jun Kim (Florida Polytechnic University)
9:36	**Virus-Based Sustainable Recovery of Critical Minerals** Inseok Chae (Texas Tech University)
9:48	**Machine Learning Enhanced Modeling of Orientation-Dependent van der Waals Interactions in Nanostructured Cuboids with Surface Roughness Effects** Jaewon Lee (University of Missouri)

Poster Session

@ International Ballroom II

Friday, Aug 7 5:00 – 6:45pm

Energy, Materials & Resources Poster Session
Chair: Jaewon Lee (University of Missouri-Columbia), Inseok Chae (Texas Tech University), Sungwoo Nam (University of California, Irvine), Hyun-Tae Hwang (University of Kentucky)

P1	**Direction-Independent Stretchable Liquid-Metal Heater Enabled by a Space-Filling Printed Layout** Hongchan Kim (Seoul National University)
P2	**Spatial Visualization and Analysis of Architectural Heritages Classification and Sustainable Typology** Jae Yoon Byun (North Carolina State University)
P3	**Regulating Sulfur Redox Microenvironments through Phase Separation for High-Energy-Density Lithium-Sulfur Batteries** Dong-Yeob Han (The University of Texas at Austin)
P4	**Sustainable AI: Routing Queries to Small Language Models** Yun Kim (University of Minnesota)

Poster Session

@ International Ballroom II

Friday, Aug 7 5:00 – 6:45pm

Energy, Materials & Resources Poster Session

Chair: Jaewon Lee (University of Missouri-Columbia), Inseok Chae (Texas Tech University), Sungwoo Nam (University of California, Irvine), Hyun-Tae Hwang (University of Kentucky)

P5	**Quantifying the Ultimate Potential of Nucleate Pool Boiling Under Idealized Bubble Dynamics** Junseo Gu (University of Florida)
P6	**Development and Evaluation of an Alkaline Water Electrolysis Hybrid System for Resource Recovery** Sang Yong Nam (University of Florida)
P7	**Evaluation of Do-It-Yourself (DIY) Air Cleaner Performance: A State-of-the-Art Review** Semi Park (University of Texas at Arlington)
P8	**Self-crosslinking of PDMS on metal substrates for self-healing coatings** Kyujin Ko (University of Cincinnati)
P9	**Toward Automated Physics-Grounded Interpretation of HVAC Operational Data Using Large Language Models** Yujin Kim (North Carolina State University)
P10	**Opto-charge Microscopy (OCM) for Resolving Particle Dynamics in Electrochemical Network Materials** Jeongok Choe (Purdue University)
P11	**Electrification of Conventional Sustainable Aviation Fuel Production: Greenhouse Gas Emissions Benefits and Costs** TJ Park, (MIT)
P12	**Porosity Dependence of Furnace Thermal Cycling Lifetime and Failure Characteristics of Multi-layer Thermal Barrier Coatings** Hye-Yeong Park (University of Central Florida)
P13	**Development of a Thermal Energy Storage Combined with Water-side Economizer System** Kwanghee Kim, (Gyeongsang National University)
P14	**Plasmon Resonance Color Shifts in Nanogaps for Rapid Thickness Mapping in Two-Dimensional Materials** Lauren Park (Korean Minjok Leadership Academy)
P15	**Implementation of Radially Graded TPMS Lattice Structures for Stress Shielding Reduction and Optimized Material Utilization in Dental Implants** Abdus-Samad Shaik (University of Central Florida)
P16	**ZIF-8 as a Porous Additive for Phosphogypsum-Based Materials** Hyeyoung Cho (Florida Polytechnic University)
P17	**Resilient and Low-Cost Passive Thermosyphon Cooling for Climate-Vulnerable and Low-Income Households** Hyun Jin Kim (California Polytechnic State University)

3. Symposium Summary

Session 1: Hydrogen, Catalysis, and Sustainable Energy

The first session brought together a strong set of presentations on energy science and technology, with particular emphasis on hydrogen, catalysis, sustainable processes, and emerging energy systems. The program covered diverse topics, including vapor-pressure suppression under nanoconfinement, Korea's fusion-energy strategy, in-situ remediation, complex-fluid separations, plastic-pyrolysis analysis, materials circularity, electrocatalyst surface configurations, organic photodetectors, natural hydrogen, and sodium-borohydride hydrolysis. This breadth demonstrated how fundamental materials and process research can contribute to practical solutions for energy production, environmental sustainability, and resource management.

A highlight of the session was the presentation by Dr. Yeongkook Oh, President of the Korea Institute of Fusion Energy, who provided a valuable overview of Korea's progress and strategic vision toward fusion-energy realization. His presentation stimulated considerable interest in the long-term scientific, technological, and international-collaboration challenges associated with fusion energy. The session also benefited greatly from an invited presentation by Professor Hyeyoung Cho, whose work on hydrocarbon behavior under nanoconfinement provided an important perspective on the role of thermal analysis and nanoscale confinement in energy-related materials research.

The session was further strengthened by the participation of Professor Seung Ihl Kam, who served as the C-2 CHE Councilor through last year, and Professor Hyun-Tae Hwang, who began serving as the C-2 CHE Councilor this year. Their contributions, together with those of the other speakers, encouraged lively discussion across a broad range of energy and sustainability topics. Participants exchanged questions and perspectives on the scalability of emerging technologies, materials selection, process integration, safety, and the connection between fundamental research and real-world deployment. The active engagement throughout the session created a productive setting for renewed collaboration among researchers from different institutions and technical backgrounds.

Session 2: Advanced Manufacturing, Functional Materials, and Nanomaterials

The second session focused on advanced manufacturing, functional materials, and nanomaterials, bringing together faculty presenters with expertise spanning nanophotonics, soft materials, phononic crystals, precision machining, thermal systems, metal additive manufacturing, polymer physics, and computational alloy design. The presentations illustrated the wide technical scope of the Energy, Materials & Resources symposium and showed how materials innovation is increasingly linked with manufacturing science, mechanics, thermal management, and device performance.

The session began with presentations on strong light-matter interactions and micro/nanotextured hydrogel systems, followed by work on mechanically tunable phononic crystals and residual lattice strain in single-crystal sapphire machining. Subsequent presentations addressed thermal-management technologies for high-thermal-load systems, low-cost titanium powder design and in-situ alloying for laser powder-bed fusion, polymer-network entanglements for soft-material design, and purpose-engineered alloys for additive manufacturing. Together, these studies represented both fundamental advances in materials behavior and practical pathways for developing functional components and scalable manufacturing processes.

Because all presentations were delivered by faculty members, the session naturally developed into an active exchange of technical ideas and professional experiences. Discussions addressed the selection of material systems, the importance of microstructure-property relationships, the challenges of transferring laboratory-scale materials

research to manufacturing environments, and the potential for integrating modeling with experiment. Several presentations extended beyond their planned time allocations as speakers and attendees engaged in detailed questions and discussion. Rather than limiting the session, this interaction reflected the high level of interest in the topics and created an especially collegial atmosphere. The session underscored the value of UKC as a venue where faculty members can discuss emerging research directions, share experiences across disciplines, and identify opportunities for future collaboration.

Session 3: Advanced Materials, Resources, and Separations

The third session began early in the morning, yet it attracted a diverse and highly engaged audience that included high school students, undergraduate and graduate students, faculty members, and researchers from multiple technical fields. This wide participation was especially encouraging because the session exposed students at different educational stages to contemporary research topics and provided opportunities for direct interaction with established scholars. The presentations and discussion continued through 10:30 a.m., reflecting sustained interest from the audience.

The session covered a broad range of advanced materials, devices, environmental technologies, and resource-related research. Presentations included soft piezoelectric-powered capacitive sensors, aluminum-bromide-based solid electrolytes, materials and devices for dynamic vision, high-performance triboelectric nanogenerators, vitrimer electrolytes containing hexagonal boron nitride fillers, and ultra-precision milling of single-crystal sapphire. The program also expanded beyond conventional materials topics through presentations on indoor cooking emissions, community-based municipal water-quality projects, virus-based recovery of critical minerals, and machine-learning-enhanced modeling of orientation-dependent van der Waals interactions in nanostructured cuboids.

The diversity of subjects created valuable links among materials science, energy storage, environmental engineering, sensing technologies, manufacturing, resource recovery, and computational modeling. Students were able to observe how research questions are formulated and communicated across different areas of engineering and science, while faculty members and researchers had opportunities to exchange technical perspectives with the next generation of scholars. The active participation of high school, undergraduate, and graduate students was a particularly meaningful feature of this session, since it reflected the educational and mentoring value of the UKC technical program. Overall, Session 3 provided an energetic conclusion to the Energy, Materials & Resources symposium and demonstrated the importance of interdisciplinary discussion in addressing future challenges in energy, materials, and sustainable resources.

4. Future Directions

The 2026 Energy, Materials & Resources Technical Symposium demonstrated the value of organizing sessions around shared scientific and societal challenges rather than narrowly defined disciplinary boundaries. The program connected researchers working in hydrogen and fusion energy, catalysis, separations, nanomaterials, advanced manufacturing, energy storage, environmental engineering, sensing, and data-driven modeling. Future symposia should continue to develop thematic sessions that encourage researchers from the Chemical, Textile, Energy, and Nuclear Engineering; Materials Science and Engineering, Nanotechnology; Mechanical, Aerospace, and Naval Engineering; Civil and Environmental Engineering and Architecture; Computer and Information Sciences; and Industrial, Manufacturing, and Systems Engineering Technical Groups to engage with common research questions.

An important operational issue for future planning is the availability of sufficient oral-presentation time. The Energy, Materials & Resources symposium was expanded to three days this year; however, combining the C-2 CHE and C-4

MSE Technical Groups effectively reduced the session time available to each group relative to their independent programming needs. A large number of applicants were accommodated within the limited three-day schedule, resulting in oral presentations being assigned 12-minute slots. This duration was often insufficient for speakers to present technically substantive work and to respond adequately to questions from the audience. None of the three oral sessions concluded within the originally scheduled time, reflecting both the compressed schedule and the strong interest generated by the presentations.

Future programs should consider allocating additional time for oral presentations and discussion, either by adding dedicated sessions, limiting the number of oral presentations, or using a more deliberate balance between oral and poster formats. For technical topics involving experimental methods, modeling, materials characterization, and system-level implications, a slightly longer presentation period would allow speakers to communicate the motivation, methodology, results, and broader significance of their work more effectively. It would also preserve time for questions and discussion, which were among the most valuable aspects of this year's sessions.

The symposium should also continue to support meaningful participation by students at all educational levels. The active participation of high school, undergraduate, and graduate students in Session 3 was particularly encouraging. At the poster session, the three judges independently selected the same poster as the top presentation. However, the presenter was a high school student and was not eligible to receive the award under the applicable eligibility criteria. This outcome indicates a need to clarify poster-award eligibility before the poster session and before the judging process begins. Alternatively, the conference could establish a dedicated high-school poster category or award to recognize outstanding work by pre-college students fairly and transparently. Such a category would encourage talented high-school participants while preserving appropriate comparison and evaluation standards for undergraduate and graduate presenters.

Several research themes also appear especially promising for continued development, including sustainable hydrogen and fusion-energy systems, critical-mineral recovery and circular materials processes, functional materials for sensing and energy storage, thermal management for high-performance systems, additive manufacturing of advanced alloys, and artificial-intelligence-enabled materials and process design. Future sessions may benefit from explicitly connecting fundamental research with challenges in scale-up, manufacturing, environmental impact, safety, and technology deployment. This approach would help participants identify collaborations that span the pathway from scientific discovery to practical implementation.

Finally, continued engagement from research institutions in both the United States and Korea will be valuable for strengthening the symposium's impact. Invited presentations from leaders in major research organizations, such as the Korea Institute of Fusion Energy, provide an important perspective on national research priorities, international collaboration, and long-term technology development. By sustaining this balance among fundamental science, applied engineering, professional networking, student development, and well-planned session formats, the Energy, Materials & Resources Technical Symposium can continue to serve as a productive platform for advancing U.S.–Korea collaboration and addressing future challenges in energy, materials, and sustainable resources.

5. Group Photos









IT, Quantum & Semiconductors

This cluster brings together leaders in computing, information technologies, quantum science, and semiconductor systems to highlight breakthroughs that are shaping the future of artificial intelligence, digital infrastructure, intelligent devices, and next-generation computing.

The **IT, Quantum & Semiconductors Technical Symposium** will feature three podium sessions and one poster session. We invite researchers and professionals from academia, industry, and government laboratories to share advances spanning computer science, information technology, artificial intelligence, data science, quantum technologies, semiconductor devices and systems, computing hardware, communications, cybersecurity, software systems, and related emerging areas. The symposium aims to foster interdisciplinary discussions and new collaborations across computing, electronics, quantum engineering, and digital innovation. This symposium is jointly organized by two Technical Groups (TGs) of KSEA and their affiliated professional societies (APS): Electrical and Computer Engineering; and Computer and Information Sciences.

The **Electrical and Computer Engineering TG (C-6 ECE)** includes members working across electrical engineering, computer engineering, semiconductors, quantum technology, circuits, systems, communications, computing hardware, signal processing, intelligent devices, and related emerging technologies. The group promotes innovations that advance electronics, information systems, semiconductor platforms, and next-generation computing technologies.

The **Computer and Information Sciences TG (C-7 CIT)** connects researchers and professionals working in computer science, information technology, artificial intelligence, IoT, data science, software systems, cybersecurity, connected technologies, human-centered systems, and emerging digital innovations. The group supports advances in computation, intelligent systems, secure and connected infrastructure, and data-driven technologies that shape research, industry, and society.

Supporting contributions are provided by related KSEA Technical Groups, including **Materials Science and Engineering, Nanotechnology (C-4 MSE)** in electronic, quantum, and functional materials; **Industrial, Manufacturing, and Systems Engineering (C-8 IMD)** in AI-enabled manufacturing, optimization, and industrial systems; and **Physics (A-1 PHY)** in quantum science, photonics, and fundamental physical platforms that support emerging quantum and semiconductor technologies.

Chair



Mingon Kang

University of Nevada, Las Vegas

Co-chairs



Sam Chung

City University of Seattle



Jungkwun Kim

University of North Texas

IT, Quantum & Semiconductors

@Augusta A

Thursday, Aug 6 5:00 – 6:45pm

Session 1: Next-Generation Computing & Intelligence

Chair: Mingon Kang (University of Nevada, Las Vegas), Sam Chung (City University of Seattle), Jungkwun Kim (University of North Texas)

Time	Title and Speaker
5:00	**Member introduction**
5:10	**An Artificial-Intelligence Agent Framework for Intelligent Livingcare Services at Smart Home** Jaehoon Jeong (Sungkyunkwan University) **Invited**
5:30	**A Large Language Model-Based Analysis for Identifying Mold-Related Issues in Buildings** San Jin (The University of Texas at Arlington)
5:45	**Topological Patching for Time Series Forecasting: A Noise-Immune Transformer Framework** Hyeonkyu Kim (Arizona State University)
6:00	**Towards Efficient and Context-Aware KV Cache Management for Long-Context LLMs** Gyuwan Kim (University of California, Santa Barbara)
6:15	**All-in-One Wearable Bioelectronics for a Continuous Assessment and Early Diagnosis of Acute Kidney Injury** Yeo, W. Hong (Georgia Tech)
6:30	**Elevator Talks**

IT, Quantum & Semiconductors

@Augusta A

Friday, Aug 7 3:15 – 5:00pm

Session 2: Advanced Materials & Quantum Physics
Chair: Mingon Kang (University of Nevada, Las Vegas), Sam Chung (City University of Seattle), Jungkwun Kim (University of North Texas)

Time	Title and Speaker
3:15	**Member introduction**
3:25	**Novel framework for non-equilibrium quantum physics** Jong Yeon Lee (University of Illinois at Urbana-Champaign) **Invited**
3:45	**Radiation Effects on DDR4 DRAM Under Cyogenic Conditions: Temperature-Dependent Analysis with Proton and Gamma-Ray** Jungsik, Kim (Gyeongsang National University)
4:00	**Electric-Field-Driven Quantum Control of Exciton Motion in Semiconducting Carbon Nanotubes** Dong Yoon Shin (University of Maryland)
4:15	**Metal-Insulator-Metal (MIM) Diode with Different Work Function Metals** Jeongwon Park (University of Nevada Reno)
4:30	**Silicon/Glass Interposer Metrology and Inspection by Shadowgraphy** Chabum Lee (Texas A&M University)
4:45	**Emission from Isolated Organic Chromophores within a Metallocene Single Crystal** Bumsu Lee (Southern Illinois University-Carbondale)

IT, Quantum & Semiconductors

@Augusta A

Saturday, Aug 8 8:00 – 10:00am

Session 3: Hardware Architecture & Future MEMS
Chair: Mingon Kang (University of Nevada, Las Vegas), Sam Chung (City University of Seattle), Jungkwun Kim (University of North Texas)

Time	Title and Speaker
8:00	**Member introduction**
8:05	**Liquid Metal Based Flexible Metamaterials and Sensors** Jeong Bong Lee (Baylor University) **Invited**
8:25	**Meta-Interconnect: A Metaconductor-Based Interconnect for Energy-Efficient AI Infrastructure** Saeyeong Jeon (University of Florida) **Invited**
8:45	**HIGH-Q 3D MICROPILLAR FREQUENCY-SELECTIVE DEVICES FOR LOW-LOSS TERAHERTZ BANDPASS FILTERING** Jungkwun Kim (University of North Texas)
9:00	**Multiphysics Analysis of Architecture-Dependent Variability in Valence-Change Resistive Memory** Yongwoo Kwon (Hongik University)
9:15	**AlN MEMS Oscillators Operating in Harsh Environment** Jaesung Lee (University of Central Florida)
9:30	**Atmospheric Pressure Plasma Deposition for High-Performance PVDF-Based Piezoelectric Nanogenerator** Choonsang Park (Milligan University)

Poster Session

@ International Ballroom II

Friday, Aug 7 5:00 – 6:45pm

IT, Quantum & Semiconductors Poster Session

Chair: Mingon Kang (University of Nevada, Las Vegas), Sam Chung (City University of Seattle), Jungkwun Kim (University of North Texas)

P1	**On the Phase of Autocorrelation for Initializing Fourier Phase Retrieval** DongHun Ryu (MIT)
P2	**Toward the Quantum Simulation and Computing Platform of Ultracold Quantum Gases of Polar Molecules** Sungjun Lee (Pohang University of Science and Technology)
P3	**Air-Hermetic Wafer-Level Packaging for High-Power RF MMICs** Jongmin Yook (KETI, Korea Electronics Technology Institute)
P4	**Research Trends in LLM-Based Code Generation** Uisang Lee (Seoul National University)
P5	**Mode conversion of hyperbolic phonon polaritons in van der Waals terraces** Byung-Il Noh (Auburn University)
P6	**How Data Centers Stream Videos** Edward Hong (Independent Researcher)
P7	**End-to-End Computer Vision Pipeline for Perforation Defect Detection and Classification in Industrial Imaging** Joanne Yun (University of Wisconsin-Madison)
P8	**Comparative Analysis of ARIMA, LSTM, Transformer, and Prophet Models for Stock Price Forecasting** Jiyoon Moon (Queen Mary University of London)
P9	**Fully Optical Synaptic Operations Enabled by Wavelength-Tunable Wafer-Scale $PtSe_2$ Layers** Sang Sub Han (Korea Basic Science Institute)
P10	**A Low Loss RF Conductor Using Cu/Co Multilayer Metaconductor for W Band Applications** Hanna Jang (University of Florida)
P11	**IGZO-Based Neuromorphic System for Spiking Neural Networks** Yumin Yun (Seoul National University)
P12	**Experiential Learning for non-STEM Major Students' Computational Thinking Through AI-Enabled Website Development with No Coding** Sehee Ha (City University of Seattle)
P13	**Dry Metal-Assisted Chemical Etching (MACE) for Black Silicon Fabrication** Taeyon Kwon (University of Florida)

Poster Session

@ International Ballroom II

Friday, Aug 7 5:00 – 6:45pm

IT, Quantum & Semiconductors Poster Session
Chair: Mingon Kang (University of Nevada, Las Vegas), Sam Chung (City University of Seattle), Jungkwun Kim (University of North Texas)

P14	**Estimating the Empowerment of Language Model Agents** Jinyeop Song (MIT)
P15	**Effectiveness of Input Vector Control on CNFET Devices** Joseph Kim (Illinois Institute of Technology)

3. Symposium Summary

- ***Session I on August 6, 2026***

  The evening begins at 5:00pm with ten minutes of member introductions to welcome attendees by Dr. Sam Chung and set the stage. Dr. Jaehoon Jeong from Sungkyunkwan University delivers a featured 20-minute talk, detailing an AI agent framework designed for intelligent living care services in smart home environments. The program then seamlessly transitions into a series of focused, fifteen-minute research presentations. San Jin from The University of Texas at Arlington opens this segment by examining how large language models can identify mold-related issues in buildings. Then, Dr. Hyeonkyu Kim from Arizona State University takes the stage to present Topological Patching, a noise-immune Transformer framework crafted for accurate time series forecasting. Next, Dr. Gyuwan Kim from the University of California, Santa Barbara shifts the focus back to AI optimization, addressing efficient and context-aware KV cache management for long-context LLMs. Dr. W. Hong Yeo from Georgia Tech introduces a vital biomedical advancement: all-in-one wearable bioelectronics engineered for the continuous assessment and early diagnosis of acute kidney injury. Finally, the session wraps up with a fast-paced round of elevator talks, allowing speakers to share rapid-fire insights before everyone departs.

- ***Session II on August 7, 2026***

  The second session opens at 3:15pm with ten minutes dedicated to member introductions, allowing participants to get acquainted before diving into the research sessions. Dr. Jong Yeon Lee from the University of Illinois at Urbana-Champaign delivers a featured twenty-minute invited talk, introducing a novel framework designed for non-equilibrium quantum physics. The schedule then flows into a series of fifteen-minute technical talks spanning physics, materials science, and engineering. Dr. Jungsik Kim from Gyeongsang National University presents a temperature-dependent analysis of radiation effects on DDR4 DRAM under cryogenic conditions, using both proton and gamma-ray exposure. Dr. Dong Yoon Shin from the University of Maryland follows to explore electric-field-driven quantum control of exciton motion in semiconducting carbon nanotubes. Dr. Jeongwon Park from the University of Nevada Reno details the design and performance of Metal-Insulator-Metal diodes using metals with differing work functions. The focus then shifts to advanced manufacturing and inspection techniques, as Dr. Chabum Lee from Texas A&M University presents silicon and glass interposer metrology using shadow graphy. Finally, the session concludes with Dr. Bumsu Lee from Southern Illinois University Carbondale, who discusses light emission from isolated organic chromophores within a metallocene single crystal.

- ***Session III on August 8, 2026***

  The last session opens briskly at 8:00 AM with a five-minute member introduction to welcome everyone and frame the day's agenda by Dr. Sam Chung. Immediately following, the session highlights two back-to-back, twenty-minute invited talks. Dr. Jeong Bong Lee from Baylor University kicks off this feature with a presentation on liquid metal-based flexible metamaterials and sensors. Saeyeong Jeon from the University of Florida then takes the podium to introduce Meta-Interconnect, focusing on metaconductor-based interconnects engineered for energy-efficient AI infrastructure. The schedule then transitions into a series of four fifteen-minute technical presentations covering advanced devices, materials, and hardware systems. Dr. Jungkwun Kim from the University of North Texas presents high-Q 3D micropillar frequency-selective devices designed for low-loss terahertz bandpass filtering. Dr. Yongwoo Kwon from Hongik University shares a multiphysics analysis examining architecture-dependent variability in valence-change resistive memory. Moving into the final half hour, Dr. Jaesung Lee from the University of Central Florida speaks regarding aluminum nitride MEMS oscillators engineered to operate reliably in harsh environments. Finally, Dr. Choonsang Park from Milligan University concludes the session with a talk on utilizing atmospheric pressure plasma deposition to build high-performance, PVDF-based piezoelectric nanogenerators.

4. Future Directions

- Member introduction and elevator talks were paid attention, while all oral presentations were successfully done with a number of audience members. Especially, elevator talks introduced around 10 poster presenters introducing themselves and their research. We will continue the introduction to build better networking.
- The cluster included three main theme domains, including IT, semiconductor, and quantum computing. Although the cluster was successful, we observed very limited participation in IT. Typically, IT itself held at least two sessions, but there were only a few presentations this year. Semiconductor and quantum computing-related presentations were similarly limited this year. It is not clear that the new adoption of cluster enhanced the engagement to the event.
- Potential integration with sponsor to the cluster or TG symposium may be a win-win strategy to bring more people together and pay attention.

5. Group Photos







Infrastructure, Mobility & Robots

The physical world is being reshaped by rapid advances in infrastructure systems, mobility technologies, and intelligent machines. Infrastructure is becoming increasingly instrumented, data-rich, adaptive, and connected. Mobility systems are evolving into intelligent ecosystems that integrate autonomous agents, human decision-making, and real-time data. Robots are expanding from controlled industrial environments into construction sites, warehouses, healthcare settings, public spaces, and homes. Addressing these transformations requires collaboration across disciplinary boundaries. The Infrastructure, Mobility, and Robots symposium explores how the built environment, mobility systems, and intelligent machines can be designed, operated, and integrated to address complex societal and technological challenges. By bringing together researchers, practitioners, and emerging scholars, the IMR symposium provides a platform for sharing innovative research, identifying cross-disciplinary collaboration opportunities, and shaping the future of intelligent, resilient, and human-centered physical systems.

Chair



JuHyeong Ryu

West Virginia University

Co-chairs



Eul-Bum Lee

POSTECH



Seokgi Lee

Youngstown State University



Ryan Choi

Eastern Michigan University

Infrastructure, Mobility & Robots

@Augusta B

Thursday, Aug 6 5:00 – 6:45pm

Connected Mobility, Cybersecurity, and Adaptive Systems

Chair: Seokgi Lee (Youngstown State University), Ji-Hung (Ryan) Choi (Eastern Michigan University)

Time	Title and Speaker
5:00	**Session Introduction** (Session Chairs: Seokgi Lee, Ji-Hung(Ryan) Choi)
5:15	**An Attribute Group-Based Conjoint Analysis Model for Consumer Preference Measurement: Application to EV Design** Rhim, Hosun (Korea University Business School)
5:30	**Structural Reorganization of the Global Container Shipping Network under Geopolitical Risk: The Case of the Red Sea Crisis** Park, Suyeon (Inha University)
5:45	**FI-DARA: Adaptive Edge-Cloud Routing for Privacy-Preserving Health Monitoring** Choi, Michael (University of Illinois Chicago)

Infrastructure, Mobility & Robots

@Augusta B

Thursday, Aug 6 5:00 – 6:45pm

Connected Mobility, Cybersecurity, and Adaptive Systems
Chair: Seokgi Lee (Youngstown State University), Ji-Hung (Ryan) Choi (Eastern Michigan University)

Time	Title and Speaker
6:00	**Beyond Economic Returns: The Duality of AI Adoption on Data Breach Incidents** Jaesung Shin (Mississippi State University)
6:15	**A Semi-Markov Process Approach to Quantify Material Content Over Multiple Product Lifecycles with Application to a Hard Disk Drive** Yong Han Kim (Purdue University)
6:30	**Nudging Secure Behavior: Examining the Effects of Attentional Nudge Strategies on Phishing Email Detection Performance** Seeung Oh (South Carolina State University)
6:45	**Session Q&A and Conclusion**

Infrastructure, Mobility & Robots

@Augusta B

Friday, Aug 7 3:15 – 5:00pm

Resilient Infrastructure and Intelligent Physical Systems
Chair: JuHyeong Ryu (WVU), Eul-Bum Lee (POSTECH)

Time	Title and Speaker
3:15	**Session Introduction** (Session Chair: JuHyeong Ryu)
3:15	**Construction Automation and Robotics in South Korea: Current Status and Future Directions** Dr. Jae Young Kim, CTO and Head of the Construction R&D Division at Hyundai Motor Group (HMG) **Invited**
3:45	**Value for Money Analysis of Public–Private Partnership and Public Sector Comparator for Building Project** Joseph Kim(California State University Long Beach)
4:00	**Safe, Permeable and Quiet Highway Pavement Infrastructure for the States with Severe Freeze/Thaw Cycles** Hosin Lee (University of Iowa)
4:15	**Mixed Traffic Cooperative Platooning using Multi-Agent Reinforcement Learning** Byungkyu Brian Park (University of Virginia)
4:30	**Knowledge-Graph Integrated Agentic Physical/Shadow AI for Autonomous Ships: A Hybrid Approach with LLM and Ontology** Geonwoo Kim (POSTECH)
4:45	**Narrative Manufacturing: A Human-Centered Path from Automation to Mass Innovation** Han, Changheon (Purdue University)
5:00	**Session Q&A and Conclusion**

Infrastructure, Mobility & Robots

@Augusta B

Saturday, Aug 8 8:00 – 10:00am

Sensing, Automation, and Infrastructure Intelligence
Chair: Woo Hyoung Lee (University of Central Florida)

Time	Title and Speaker
8:00	**Session Introduction** (Session Chair: Woo Hyoung Lee)
8:00	**Novel Electrochemical MIP Sensors for Monitoring Emerging Water Contaminants: PFAS and Odor Detection** Woo Hyoung Lee (University of Central Florida)
8:15	**Performance Assessment of Permeable Pavement under Intense Rainfall in U-Ecotron: A CFD-Based Approac** Seunghun Baek (Seoul National University)
8:30	**Automated System for Bridge Corrosion Detection and Severity Classification** Joseph Kim (California State University Long Beach)
8:45	**AI-Driven Pavement Crack Detection and Severity Classification** Joseph Kim (California State University Long Beach)
9:00	**Compound Heatwave–Extreme Rainfall Effects on Urban Drainage and LID Performance: A SWMM Continuous Simulation Study in Seoul** Yun, Hyeryeong (Seoul National University)
9:15	**Mobile Routing System for Older Adults' Walking** John Sohn (University of Nevada Las Vegas)
9:30	**Exploring the Electro-Tribological Behavior of Laser Cladded High Entropy Alloys** Dongyun Lee (Iowa State University)
9:45	**Optimal Camera Placement for 3D Surface Coverage** Sumin Hu (University of Texas at Austin)
10:00	**Session Q&A and Conclusion**

Poster Session

@ International Ballroom II

Friday, Aug 7 5:00 – 6:45pm

Emerging Research in Infrastructure, Mobility, and Robots

Chair: JuHyeong Ryu (WVU), Eul-Bum Lee (POSTECH), Seokgi Lee (Youngstown State University), Ji-Hung (Ryan) Choi (Eastern Michigan University)

P1	**Influence of cementitious additives mising method with clay soil in unconfined compressive strength** Hyunjong Cha (Texas A&M University)
P2	**Hierarchical Framework using Reinforcement Learning for AMR Dispatching in Flexible Job Shop Enviroment** Jaemin Park (Purdue University)
P3	**AI-CFD Coupled Simulation for Urban Ventilation and Heat Island Mitigation of Green Infrastructure atop the Yangjae IC Underground Road** Hyunjae Kim (Seoul National University)
P4	**Automated Urban Flood Risk Screening Across Diverse Korean Terrain Types Using SWMManywhere and SSP Climate Scenarios** Nayoung Kim (Seoul National University)
P5	**Safety-by-Design Vision-Language Models for Bridge Inspection Documentation Quality Control** Kyubyung Kang (Purdue University)
P6	**A Preliminary Study on the Feasibility of UAS-Based Lighting in Road Construction Work Zones** Kyubyung Kang (Purdue University)
P7	**Metaheuristic Optimization of Railroad Horizontal Alignment with Complete Curve Geometry and Obstacle Avoidance** Myungseob Kim (KOTTA)
P8	**A Post-Hurricane Building Roof Damage Assessment Using Multi-Source Aerial Observations** Anjin Chang (Michigan State University)
P9	**AI-Enabled Drone for Wildfire Spread Classification Using Synthetic Image Sequences** Kevin Lee (Cornell University)
P10	**Heuristic Approach for Collaborative UAV-UGV Area Coverage Path Planning with Battery Constraints** Jackie Lee (Texas A&M University)

Poster Session

@ International Ballroom II

Friday, Aug 7 5:00 – 6:45pm

Emerging Research in Infrastructure, Mobility, and Robots

Chair: JuHyeong Ryu (WVU), Eul-Bum Lee (POSTECH), Seokgi Lee (Youngstown State University), Ji-Hung (Ryan) Choi (Eastern Michigan University)

P12	**Physics-Informed Neural Network Modeling of Salt Transport and Thermal Conductivity Evolution in Unsaturated Soils** Jongwan Eun (University of Maryland)
P13	**Estimating the natural gas demand margin of electricity load growth** Jin Wook Ro (Oak Ridge National Laboratory)
P14	**End-to-End Computer Vision Pipeline for Perforation Defect Detection and Classification in Industrial Imaging** Joanne Yun (University of Wisconsin-Madison)
P15	**An Optimal Consolidation Policy for Vehicle Routing Plans in Last-Mile Delivery: A Deep Q-Learning Approach** Seokgi Lee (Youngstown State University)
P16	**Analysis of the Impact and Time Lag of Maritime Supply Chain Disruption on Air Freight Demand and Freight Rates** Seryang Kim (Inha University)
P17	**From Scene Perception to Actionable Space: Semantic Risk Field for Safe Robot Navigation** Seonho Woo (Purdue University)
P18	**Short-Term Resilience Strategies Amid Supply Disruptions: An Analytical Perspective** Ryan Choi (Eastern Michigan University)
P19	**Mixed Reality Training for Industrial Assembly: Integrating Optimized Task Sequences with Motion-Based Ergonomic Monitoring** JuHyeong Ryu (West Virginia University)
P20	**Freight-passenger Combined Mobility in Underserved Communities** Christopher Quinn-Bean (Morgan State University)

3. Symposium Summary

The Infrastructure, Mobility, and Robots (IMR) Symposium is a joint initiative of C-5. Civil and Environmental Engineering, Architecture and C-8. Industrial and Systems Engineering, Management Sciences, and Decision Sciences. The symposium brings together researchers working at the intersection of the built environment, intelligent transportation, automation, robotics, sensing, AI, and resilient infrastructure. By connecting the complementary perspectives of C-5 and C-8, IMR provides a cross-disciplinary forum for exploring how emerging computational and physical technologies can transform the design, operation, and management of future infrastructure and mobility systems.

The 2026 IMR program consists of three sessions. Session I, "***Connected Mobility, Cybersecurity, and Adaptive Systems***," on August 6, focuses on intelligent and adaptive systems spanning mobility, logistics, privacy-preserving health monitoring, cybersecurity, sustainable product systems, and human decision-making. The presentations illustrate the breadth of systems-level approaches needed to manage increasingly connected physical and digital environments.

Session II, "***Resilient Infrastructure and Intelligent Physical Systems,***" on August 7, highlights the convergence of infrastructure engineering, automation, robotics, AI, and autonomous systems. The session features an invited presentation by Dr. Jae Young Kim of Hyundai Motor Group on the current status and future directions of construction automation and robotics in South Korea, followed by research on public-private infrastructure investment, resilient pavement systems, multi-agent reinforcement learning for cooperative mobility, agentic AI for autonomous ships, and human-centered manufacturing.

Session III, "***Sensing, Automation, and Infrastructure Intelligence,***" on August 8, emphasizes sensing technologies, infrastructure monitoring, computational modeling, and intelligent automation. Topics range from environmental sensing and pavement performance to automated bridge and pavement condition assessment, urban drainage resilience, mobility for older adults, advanced materials, and optimal sensing-system deployment.





1. Symposium Summary

The Physics Session brought together six 15-minute presentations spanning an unusually broad range of scales from the quantum structure of spacetime and the behavior of elementary particles to powerful electromagnetic radiation, DNA mechanics, and the response of living cells to nanomaterials. Despite this diversity, the talks shared a common theme: using physical principles, advanced measurements, and computation to reveal structures and processes that cannot be observed directly.

At the most fundamental level, Prof. Monica Kang of Texas A&M University, who was invited as a recipient of the 2025 Outstanding Young Researcher Award from the Association of Korean Physicists in America, discussed how quantum entanglement may help generate the geometry of spacetime. Prof. Chueng-Ryong Ji of North Carolina State University, then examined helicity in different formulations of relativistic physics. Prof. Philip Chang of University of Florida presented the first search for the simultaneous production of a Higgs boson and two force-carrying particles through vector-boson scattering. Prof. Ki-Yong Kim of University of Maryland described the production of powerful terahertz radiation using laser-driven plasma accelerators that may contribute to future advances in spectroscopy, imaging, communications, and the ultrafast control of materials.

The final two presentations demonstrated how physics can illuminate biological systems. Prof. Ellen Kang of University of Central Florida examined how molybdenum disulfide nanoflakes affect actin, a protein network that gives cells their shape and supports movement. Prof. Harold Kim of Georgia Institute of Technology presented experimental work showing that DNA sequence influences which side of the double helix preferentially faces the inside of a loop. Overall, the session offered speakers and attendees an opportunity to appreciate the remarkable breadth of modern physics and to engage in lively Q&A and discussion after each presentation.

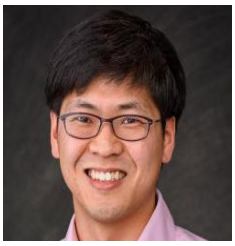
Chairs



Harold Kim

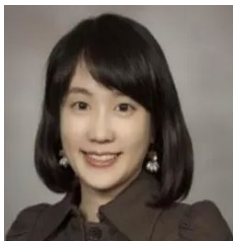
Georgia Institute of Technology

Co-chair



Bumjung Kim

New Jersey City University



Soeun Kim

Azusa Pacific University

Basic Sciences

@Colonial B

Thursday, Aug 6 5:00 – 6:45pm

CHM Session: Frontiers in Analytical Chemistry: Spatiotemporal Resolution, Molecular Insights, and Structural Control
Moderator: Bumjung Kim (Kean University)

Time	Title and Speaker
5:00	**Modeling secondary organic aerosol formation from atmospheric process of wildfire smoke: Chamber experiments to air quality simulations** Myoseon Jang (University of Florida)
5:17	**In Situ Raman Spectroscopy Reveals Bacterial Viability and Colony Growth Dynamics** Kaeul Lim (Purdue University)
5:35	**Fluorogenic Covalent Probes for RNA via 2'-OH-Selective Acylation** Jinwoo Shin (Stanford University)
5:53	**Complexation-Mediated Diffusion-Limited Crystal Growth: A General Framework for Anisotropic Crystal Growth** Youngjong Kang (Hanyang University)
6:10	**Accelerating Materials Characterization Using 4D-STEM and Data Analytics** Honggye Kim (University of Florida)
6:27	**Ultrafast Phase Transformation Studies using X-ray Free-Electron Lasers** Hyunjung Kim (Sogang University)

Basic Sciences

@Oakmont B

Friday, Aug 7 3:15 – 5:00pm

PHY Session: Investigating Nature Across Scales in the Physical Sciences
Moderator: Harold Kim (Georgia Institute of Technology)

Time	Title and Speaker
3:15	**Purely GHZ-like Entanglement is Forbidden in Holography** Monica Kang (Invited Speaker, Texas A&M University)
3:35	**Light-Front Helicity** Chueng Ji (North Carolina State University)
3:52	**Search for Associated Production of a Higgs Boson and Two Vector Bosons via Vector Boson Scattering** Philip Chang (University of Florida)

Basic Sciences

@Oakmont B

Friday, Aug 7 3:15 – 5:00pm

PHY Session: Investigating Nature Across Scales in the Physical Sciences
Moderator: Harold Kim (Georgia Institute of Technology)

Time	Title and Speaker
4:09	**Coherent Terahertz Radiation from Laser-Wakefield Acceleration** Ki-Yong Kim (University of Maryland)
4:26	**How molybdenum disulfide (MoS2) modulates actin assembly dynamics and fibroblast cell viability** Ellen Kang (University of Central Florida)
4:43	**Poloidal Dynamics of DNA Minicircles** Harold Kim (Georgia Institute of Technology)

Basic Sciences

@Oakmont B

Saturday, Aug 8 8:00 – 10:00am

MAS session: Advances in Mathematical Theory and Statistical Modeling
Moderator: Soeun Kim (University of Delaware)

Time	Title and Speaker
8:00	**Missing data imputation methods for models with interactions** Soeun Kim (University of Delaware)
8:20	**A Braun–Zeckner Sphere-Collapse Theorem for k = 3** Stephen Yoo
8:40	**Learning Contemporary Geometry Through Inquiry: Voronoi Diagrams and Delaunay Triangulations** Younggon Bae (University of Texas Rio Grande Valley)
9:00	**Goodness-of-fit Tests for Multinomial Models with Inverse sampling** Hokwon Cho (University of Nevada, Las Vegas)
9:20	**The All-k Neighborhood Collapse** Stephen Yoo
9:40	**Bayesian Analysis of Multivariate Joint Model with a Flexible Covariance Structure** Seongho Song (University of Cincinnati)

Poster Session

@ International Ballroom II

Friday, Aug 7 5:00 – 6:45pm

Chairs: Harold Kim (Georgia Institute of Technology), Bumjung Kim (New Jersey City University), Soeun Kim (Azusa Pacific University)

P1	**Practical T1 Analysis for Quadrupolar Solid-State NMR Experiments** YeonJun Choi (Texas A&M University)
P2	**Reconstruction of Atomic-Scale Electronic Structures via Active Learning-Driven Scanning Tunneling Spectroscopy Mapping** HyeongChan Suh (University of Texas at Dallas)
P3	**Low-energy tail of the spectral density for a particle interacting with a quantum phonon bath** Donghwan Kim (University of Texas at Austin)
P4	**Developing a catalysis-based fluorometric method for endogenous Copper in live cells** Soyoung Choi (University of Pittsburgh)
P5	**Tuning polymer nanoparticle morphologies via photochemical decarboxylation** Seungyoon Han (University of Florida)
P6	**Spatiotemporal organization of membrane protein controls bacterial extracellular electron transfer** Youngchan Park (Indiana University Bloomington)
P7	**Functional Connectome Alterations Underlying Posttraumatic Stress Disorder** Eun Namgung (Texas A&M University Health Science Center)
P8	**Integrated spatial multi-omics identifies TRPS1 as a regulator of joint cell fate linking cartilage development to osteoarthritis** Ji-Hye Yea (Johns Hopkins University)
P9	**Large Language Model and Human Performance on a Motor Sequence Learning Task** Hakjoo Kim (McLean Hospital, Harvard Medical School)
P10	**Modeling U.S. Drought and Wildfire Communications in Social Media** Woi Sok Oh (University of Waterloo)

2. Group Photo



Emerging Areas (Entertainment Tech & STEAM)

1. Symposium Description

The D-1 cluster explores emerging areas in Social Sciences (Anthropology, Economics, Political Science, Sociology, Public Policy, etc.), Psychology, Digital Arts, STEM Education, and Other Sciences. The STEAM-Centered Social Science will feature three podium sessions and one poster session. We invite researchers and professionals conducting qualitative, quantitative, computational, and integrated work in artificial intelligence, educational technology, behavioral health, criminal justice, and related STEAM fields to present empirical findings and conceptual frameworks that address emerging challenges in human-AI interaction, educational ecosystems, and societal well-being, while engaging in discussions that foster interdisciplinary collaboration and new research connections.

Session 1: Framework & Artificial Intelligence

This session examines how AI is transforming diverse domains through innovative frameworks and applications. Presentations introduce machine learning insights into volunteer mentor retention over time, analyses of university knowledge complexity versus regional innovation, an adaptive behavioral health platform, tools for evaluating AI-integrated STEM teaching and teacher–AI collaboration, and building social presence in virtual offices.

Session 2: Diverse Methodologies

This session highlights the breadth of qualitative and quantitative approaches used to address critical questions across education, psychology, engineering, and healthcare. The qualitative studies explore the distinctive cultural assets of international female STEM students and analyze mentoring ecosystems in the engineering research center. The quantitative studies examine engineering team communication in a video game environment, investigate the relationship between children's emotion regulation and emotional responses using electroencephalography (EEG) and electrocardiography (ECG) measures, and evaluate the effects of feedback in medical certification standard-setting using survey data and statistical analyses.

Session 3: Artificial Intelligence & Practice

This session highlights the practical implementation and direct impact of artificial intelligence across critical societal sectors, with a strong emphasis on criminal justice and education. Presentations in this session explore how AI is actively reshaping professional practices and operational security, including its dual role as an investigative tool and emerging threat in criminology, its effects on institutional security in U.S. prisons, and the use of deep learning for automated scoring of police shooting targets. Furthermore, the session addresses practical educational applications, examining the reliability of prompt engineering in human-AI grading agreements and the utilization of AI-powered student-emulating agents to enhance preservice teachers' responsive instruction.

Chairs



Hyoungah Park

Saint Peter's University

Co-chairs



Benjamin Ahn

The Ohio State University



Danielle Lee

American Board of Internal Medicine



Jung Han

K-EnterTech Hub

Emerging Areas

@Colonial A

Thursday, Aug 6 5:00 – 6:45pm

Session A: Framework & Artificial Intelligence
Chair: Benjamin Ahn (The Ohio State University)

Time	Title and Speaker
5:00	**Temporal Shifts of Key Factors for Volunteer Retention in Local Mentoring Programs Using a Machine Learning Approach** Juyoung Lee, Sunghyun Kim, Saumya Diwan (Emory University)
5:20	**University Complexity and the Decoupled Role of Universities in U.S. Regional Innovation Systems** Sooyeon Lim (Georgia Institute of Technology, Seoul National University)
5:40	**FitMindMove: Multi-Dimensional Hybrid Model Selection for Behavioral Health AI Systems** Saahoon Hong, Hea-Won Kim (Indiana University Indianapolis), Terry Choi, Dongwoo Shin (A TO Z Service Inc)

Emerging Areas

@Colonial A

Friday, Aug 7 3:15 – 5:00pm

Session B: Diverse Methodologies
Chair: Danille Lee (American Board of Internal Medicine)

Time	Title and Speaker
3:15	**Female International Students in STEM: Distinctive Cultural Assets** Jae Hoon Lim (University of North Carolina at Charlotte) **Invited**
3:40	**Analyzing Mentoring Ecosystems in Engineering Research Centers** Hwangbo Bae (University of Michigan) **Invited**
4:00	**Utilizing a Video Game to Examine Engineering Team Communication** Benjamin Ahn (The Ohio State University) **Invited**
4:20	**Child Executive Function Predicts Neurophysiology Indicators of Emotion Regulation: Insights from Frontal Alpha Asymmetry and Respiratory Sinus Arrhythmia** Yelim Hong (The University of Texas at Austin)
4:40	**How Does Feedback Influence Standard-Setting Ratings in Medical Certification Assessments?** Danielle Lee (American Board of Internal Medicine)

Emerging Areas

@Colonial A

Saturday, Aug 8 8:00 – 10:00am

Session C: Artificial Intelligence & Practice
Chair: Jung Han (K-EnterTech Hub)

Time	Title and Speaker
8:20	**Technological Changes in U.S. Prisons: Contraband, AI, and Institutional Security** Hyesun Kim (Worcester State University)
8:40	**Prompt Engineering and Human-AI Grading Agreement** Jesse Ha (Indiana University)
9:00	**AI-Based Automated Scoring for Police Shooting Targets** Hyoungah Park (Saint Peter's University)
9:20	**Preservice Teachers' Responsive Mathematics Teaching with AI-Powered Student Emulating Agents** Dabae Lee (Kennesaw State University)
9:40	**Q&A**

Poster Session

@ International Ballroom II

Friday, Aug 7 5:00 – 6:45pm

STEM-Centered Social Science Cluster Poster Session
Chair: Hyoungah Park (Saint Peter's University), Benjamin Ahn (The Ohio State University), Danielle Lee (American Board of Internal Medicine), and Jung Han (K-EnterTech Hub)

P1	**Combining Convex GSCA and Bayesian Networks: A Proof-of-Concept Application to Cognitive-Therapy Prioritization in CBT-I** GyeongCheol Cho (Ohio State University)
P2	**Lived Experiences of Loneliness and Connectedness Among Korean Immigrants Aged 50 and Older Living in the United States** Areum Han (University of South Florida)
P3	**Framing Conflict: A Domain-Adapted Language Model Approach to Cross-National Media Framing Analysis** Dawoon Jung (Purdue University)
P4	**Exercise, Prefrontal Oxygenation, and Cognitive Control in College Students** Yeonhak Jung (California State University, Northridge)
P5	**The Effects of AI Chatbot and Face-to-Face Counseling on Stress, Burnout, and Resilience in Athletes** Ga-young Kim (Old Dominion University)
P6	**Developing CareNoteAI: A Generative, Ontology-Informed Prototype for Behavioral Health Decision Support**Sungjun Kim (Boston University)
P7	**Humanities-Guided Human-AI Co-Evolution in Mental Health Services** June Sin (Texas Tech University)
P8	**Interdisciplinary Curriculum in Physical Education and Impact on Student Outcomes: A Systematic Review and Meta-analysis** Ji Hye Yang (Old Dominion University)

3. Symposium Summary

Session 1

Three presenters presented in the session. This session examined how data analytics and AI can improve outcomes across education, innovation, and healthcare. The first study used machine learning and longitudinal data to identify how factors influencing volunteer mentor retention change over time, highlighting the roles of peer relationships and teaching effectiveness. The second study analyzed U.S. patent data to show that universities maintain knowledge portfolios that are only weakly aligned with local industry, offering new insights into regional innovation systems. The third presentation introduced FitMindMove, an AI-powered platform that supports substance use disorder recovery through personalized interactions, real-time analytics, and clinician oversight. Together, these presentations demonstrated how computational and AI-driven approaches can generate actionable insights, support human development, and inform more adaptive and effective social systems.

Session 2

This session featured five presentations, including three invited speakers. The first study used interviews to compare the adaptation and acculturation of two groups of international female students, highlighting their distinctive cultural assets and adaptation strategies in U.S. higher education and the STEM workforce. The second study integrated semi-structured interviews and participant-generated sociograms to examine mentoring relationships and networks within an NSF Engineering Research Center. The third study analyzed communication metrics from audiovisual recordings of graduate engineering students playing Overcooked to examine team communication and outcomes. The fourth study used electroencephalography and electrocardiography measures to investigate children's emotion regulation and emotional responses. The fifth study used multiple linear regression and survey data to examine the effects of feedback on panelists' ratings in medical certification standard setting. Together, the presentations highlighted the value of diverse methodological approaches for advancing research across education, psychology, engineering, and healthcare.

Session 3

Four presenters presented in this session. This session highlighted the practical implementation and direct impact of artificial intelligence across critical societal sectors, with a strong focus on criminal justice and education. The first study examined technological changes in U.S. correctional facilities, analyzing how AI and modern technologies are utilized to address contraband challenges and strengthen institutional security. The second study investigated prompt engineering techniques and evaluated the level of agreement between human raters and AI in automated grading assessments. The third study presented an AI-based deep learning approach for the automated scoring of police shooting targets to improve training efficiency and accuracy in law enforcement. The fourth study explored the integration of AI-powered student-emulating agents to facilitate and enhance preservice teachers' responsive mathematics teaching practices. Together, these presentations demonstrated how practical AI solutions can transform operational security, assessment protocols, and pedagogical training across diverse professional and educational domains.

4. Future Direction

Looking ahead, the name of the cluster, Emerging Area, has limitations in accurately conveying what the cluster is about. Different names, such as 'STEAM-Centered Social Science,' or others, would be better. And, in the UKC 2026 Flyer App, Other sessions were mistakenly listed in the Emerging Area, and there were no Emerging Area sessions or posters at all.

In addition, although K-EnterTech Hub had been planned to participate in the session, it could not participate in sessions as a separate forum was held. Better coordination is needed for the future.

Finally, it was unfortunate that two speakers from Thursday's session were absent. Although the session chair contacted the speakers about the upcoming presentation and session, no responses were received from the two absent speakers. In the future, it would be helpful to coordinate with the UKC Committee to confirm whether the speakers have registered (e.g., paid the registration fee) and to double-check their participation. And if the speakers need to withdraw, finding a way to bring in new speakers would benefit the session and the conference.

5. Group Photos









SEED Report

SEED 2026 Summary

SEED 2026 was held on August 4-5, 2026, at the Omni Orlando Resort at ChampionsGate in Orlando, Florida. Supported by the Korean-American Scientists and Engineers Association (KSEA), the workshop continued SEED's mission to mentor and support junior Korean-American scientists and engineers as they build successful, sustainable careers. The two-day program combined scientific inspiration with practical career development through plenary lectures, panel discussions, mentoring, networking, poster presentations, and direct engagement with sponsoring institutions.

1. Organizing Committee



Juhyun Lee
University of Texas at Arlington



Estelle Park
Purdue University



Jeong-Ho Lee
Florida Atlantic University



Crystal Shin
Baylor College of Medicine



Sunjae Kim
University of Florida



Myungwoon Lee
Drexel University



Seungil Kim
Mississippi State University

With an emphasis on building a sustainable and successful career and life, SEED 2026 brought together 86 selected participants across graduate, postdoctoral, and early-career stages, along with three plenary speakers and 14 mentors. Day 1 focused on doctoral training, productive mentor-mentee relationships, and career pathways in academia, national laboratories, and industry, while Day 2 addressed work-life balance, sustainable research, scientific leadership, poster presentations, and institutional networking. The program also included a networking dinner, an icebreaker team activity, an additional LINER-sponsored networking event, a 43-poster research session, and engagement with 15 sponsoring institutions and organizations.

2. Group Photo



3. Schedule - Day1

Time	Session	Topic	Speaker
11:00-12:00	**Registration**	Registration	
11:30-1:00		Lunch	
1:00-1:10		Opening Remarks and Introduction	SEED Organizers
1:10-1:30		Welcome Address	KSEA President Yong Kyu Yoon
1:30-2:20	**Session 1**	Plenary Talk I: Carving Your Own Orbit: The Courage to Navigate Uncharted Paths	Prof. Eun-Suk Seo
2:20-2:30		Break	
2:30-3:30	**Session 2**	Panel: Successful PhD Life / Building a Successful Relationship in the Lab	Jungwook Paek, Juhun Lee, Sangyeon Cho, Youngsup Song
3:30-4:00		Coffee Break & Group Photo	
4:00-4:50	**Session 3**	Plenary Talk II: From Biomedical Engineering to Global Bioinnovation	Prof. Deok-Ho Kim
4:50-5:00		Break	
5:00-6:00	**Session 4**	Panel: Career Pathways and Job Search Strategies in the USA	Eunyoung Choi, Young Jong Lee, Hyun-Hwan Jeong, Youngchan Park
6:00-6:30		Break	
6:30-8:00		Networking Dinner	
8:00-9:00	**Session 5**	Icebreaker Team Game	Participants

Day2

Time	Session	Topic	Speaker
8:00-9:00		Breakfast	
9:00-10:00	**Session 1**	Panel: Work and Life Balance	Juhun Lee, Sungu Kim, Chi Hwan Lee, Jiyun Kang
10:00-10:10		Break	
10:10-11:00	**Session 2**	Plenary Talk III: Vision for K-BIGHEART - Biomedical Institute for Global Health Research and Technology	Prof. Luke Pyung-Se Lee
11:00-11:30		Break	
11:30-12:30	**Session 3**	Panel: Sustainable Research	Woo Hyoung Lee, Ellen Kang, Dong-Hyun Kim, You-Yeon Won
12:30-2:00		Lunch & Sponsor Introductions	
2:00-3:30		Poster Session	Participants
3:30-5:30		SEED Sponsors' Time	Sponsors & Participants
5:30-6:00		Break	
6:00-6:30		Poster Awards and Closing	SEED Organizers

4. Plenary Speakers and Mentoring Program



Eun-Suk Seo
University of Maryland, College Park

Carving Your Own Orbit: The Courage to Navigate Uncharted Paths



Deok-Ho Kim
Johns Hopkins University

From Biomedical Engineering to Global Bioinnovation: A Journey in Research, Leadership, and Entrepreneurship



Luke Pyung-Se Lee
Harvard Medical School / POSTECH

Vision for K-BIGHEART: Biomedical Institute for Global Health Research and Technology

The three plenary talks combined personal career perspective with scientific vision. Prof. Eun-Suk Seo used her path in high-energy cosmic-ray and space-based research to discuss the courage required to navigate uncharted professional directions; Prof. Deok-Ho Kim connected interdisciplinary bioengineering, leadership, and entrepreneurship to the development of global bioinnovation; and Prof. Luke Pyung-Se Lee presented the vision for K-BIGHEART while reflecting on a career spanning academia, industry, international leadership, and institution building. Four mentor panels then translated these broader perspectives into practical guidance for trainees and early-career researchers.

- Successful PhD Life / Building a Successful Relationship in the Lab: mentor-mentee expectations, communication, research independence, preparation for the next career stage, and professional conflict resolution.
- Career Pathways and Job Search Strategies in the USA: application timing, networking, research fit, interview preparation, and differences among faculty, national laboratory, and industry searches.
- Work and Life Balance: setting boundaries, avoiding burnout, navigating relocation and major life events, family responsibilities, and sustaining productivity across career stages.
- Sustainable Research: developing a research niche, selecting projects and collaborations, managing grant and manuscript cycles, and maintaining long-term creativity and productivity.

5. Poster Session and Poster Awards

The SEED 2026 poster session featured 43 research presentations spanning engineering, physical sciences, biomedical research, computing, sustainability, and related fields. The 90-minute session gave participants a forum to present their work, receive scientific feedback, and connect with mentors, peers, and sponsoring institutions across disciplines. During the closing session, Kyunghyeon Lee (University of Chicago) received 1st Place, Yuri Kang (POSTECH) received 2nd Place, and Ji Hyeon Kim (Stanford University) and Jimin Lee (Georgia Tech) were recognized in 3rd Place. Poster-award prizes included an iPad, Beats Studio Pro, AirPods, and an Amazon gift card.

Award	Awardee	Affiliation
1st Place	Kyunghyeon Lee	University of Chicago
2nd Place	Yuri Kang	POSTECH
3rd Place (tie)	Ji Hyeon Kim	Stanford University
3rd Place (tie)	Jimin Lee	Georgia Tech









6. Networking and Community Building

Formal mentoring was complemented by multiple opportunities for informal interaction. Day 1 included a networking dinner and an icebreaker team game, followed by an optional LINER-sponsored networking event at Miller's Ale House near the conference hotel. These activities were intended to lower barriers between career stages, encourage cross-disciplinary conversation, and help participants form peer and mentor connections outside the structured panel format.

7. Sponsors' Time

Eighteen sponsoring institutions and organizations participated in SEED 2026. Eleven sponsor introductions were incorporated into the Day 2 lunch program, followed by thirteen dedicated small-group teatime sessions from 3:30 to 5:30 PM. The teatime was organized as four 30-minute rounds: three assigned sessions followed by a final open session, allowing participants to rotate among institutions and speak directly with representatives. Discussions covered research environments, faculty and professional opportunities, recruiting timelines, institutional priorities, and other information that is often difficult to obtain from formal job announcements alone.

Institute	Lunch on Wed	5min Presentation	Sponsor Teatime
KOFST			
NRF	o	o	o
KSEA			
Hyundai Motor Chung Mong-Koo Foundation	o		
Rural Development Administration			o
Seoul Tech	o	o	o
Sookmyung Women's University	o	o	o
Hanyang University	o	o	o
POSTECH	o	o	o
NST	o	o	
DGIST	o		o
Korea University	o	o	o
Ajou University	o	o	o
Yonsei University	o		o
KIRD	o	o	o
LINER	o	o	o
Ewha Womans University	o	o	o
Pukyong National University			

8. 2026 Participant Feedback

Ten participants completed the post-event survey available at the time of this report. Overall program satisfaction averaged 4.6 out of 5. Among session ratings, the Icebreaking Trivia and Sustainable Research panel each averaged 4.7/5; Plenary Talks I and II also averaged approximately 4.7/5 among the nine respondents who rated those sessions, and Plenary Talk III averaged 4.6/5. The Sponsor's Tea Time averaged 3.9/5, reflecting mixed feedback: respondents valued the direct access to institutional representatives and recruitment information, while also identifying opportunities to improve lunch-room noise, participant assignments, transition time, and session instructions. More broadly, participants praised the organization, responsive moderation, substantial Q&A, and access to senior researchers, while recommending more small-group mentoring and more structured peer-to-peer networking.

> *"SEED helped clarify my future career path and gave me practical guidance for the faculty job search, professional development, and building meaningful professional relationships." - Post-event survey participant-*

Program Strengths Identified in the Survey

- **Engaging Panel Discussions**: Career-focused panel sessions provided sufficient time for Q&A and encouraged open, practical discussions between mentors and participants.
- **Practical Career Guidance**: Participants valued specific advice on faculty job searches, professional development, research careers, work–life balance, and long-term career planning.
- **Direct Access to Mentors**: Interaction with senior researchers allowed participants to hear personal experiences, ask individual questions, and gain perspectives that are difficult to obtain through formal presentations alone.
- **Valuable Sponsor Teatime**: Direct conversations with sponsoring institutions provided practical information on faculty recruitment, hiring timelines, institutional opportunities, and other details not easily available through job postings.
- **Meaningful Networking Opportunities**: SEED created new connections among graduate students, postdoctoral fellows, junior faculty, senior researchers, and institutional representatives across a broad range of scientific and engineering disciplines.
- **Well-Organized and Interactive Program**: Participants appreciated the variety of sessions and the organizers' and moderators' flexibility in responding to audience interests and maintaining active discussion.

Areas for Future Improvement Identified in the Survey

- **Smaller Mentor Groups**: Organize smaller mentor–mentee groups to allow more candid, personalized discussions about career planning, job searches, and individual challenges.
- **Structured Peer Networking**: Add dedicated networking sessions by research area or career interest to help participants build stronger connections with peers in related fields.
- **Broader Career Exposure**: Include more opportunities to interact with professionals from industry, national laboratories, and government research institutes.
- **Sponsor Introduction Format**: The 5-minute sponsor presentations provided valuable institutional information, but each institute's presentation was much longer than 5 minutes, making it hard to eat, listen, and interact with sponsor reps. Future programs should keep presentations to exactly 5 minutes or use brief prerecorded video segments (Seoul Tech's example was ideal).
- **Sponsor Teatime Logistics**: Preserve the Sponsor Teatime format while improving participant assignments, session timing, transition time between rooms, and providing clearer instructions for both participants and sponsors. Assigned teatime rooms were difficult to find.

9. Concluding Remarks

It was an honor to serve as Chair of the 2026 SEED Workshop. This year's program brought together an outstanding group of graduate students, postdoctoral scholars, early-career professionals, distinguished plenary speakers, and committed mentors for two days of focused discussion, career development, and community building.

I extend my sincere gratitude to our three plenary speakers - Prof. Eun-Suk Seo, Prof. Deok-Ho Kim, and Prof. Luke Pyung-Se Lee - for sharing not only their scientific vision but also the choices, challenges, and lessons that shaped their careers. I am equally grateful to our 14 mentors, whose candid perspectives made the panel discussions practical, engaging, and directly relevant to participants navigating the next stages of their professional lives.

The success of SEED 2026 was made possible by the year-long efforts of the organizing committee, the generous support of KSEA leadership and headquarters, the contributions of our volunteers, and the participation of 18

sponsoring institutions and organizations. Their collective support allowed the program to connect mentorship, scientific exchange, career exploration, and institutional networking in a single workshop.

The post-event feedback also provides a useful roadmap for strengthening future SEED programs. Participants valued the depth of the panel discussions, the practical career advice, and the rare opportunity to speak directly with mentors and sponsoring institutions. At the same time, they asked for smaller mentoring groups, more structured peer networking, clearer poster guidance, and smoother sponsor-session logistics.

These comments reinforce an important lesson for future programs: the strongest elements of SEED are the direct human interactions, and the program should continue to create more time and better structure for those conversations.

I hope the relationships formed in Orlando will extend well beyond this workshop - through continued mentorship, collaborations, career opportunities, and lasting connections across disciplines and institutions. The strength of SEED is ultimately the community that participants, mentors, sponsors, and organizers build together.

Juhyun Lee, Ph.D.
SEED 2026 Workshop Chair
University of Texas at Arlington

SEED 2026 at a Glance

86 Participants	3 Plenary Speakers	14 Mentors	43 Posters	15 Sponsors

IES Symposium

IES 2026 — 8th Innovation and Entrepreneurship Symposium Report

Overview

The Innovation and Entrepreneurship Symposium (IES) is KSEA's flagship platform bridging entrepreneurial communities across the US and Korea, held each year alongside the US-Korea Conference (UKC). Now in its 8th year, IES 2026 brought together founders, investors, technologists, and researchers for three days of workshops, competitive pitching, an innovation showcase, and cross-border networking — anchored this year by a major new addition: the Global R&D Partnership and Networking Program.

Since its founding in 2019 in Chicago, IES has grown from an IT- and biotech-focused gathering into a multi-track symposium spanning AI, robotics, healthcare, and entertainment, hosted in cities including Orange County, Washington DC, Dallas, San Francisco, and Atlanta. IES 2026 marked the program's first year in Orlando, and its first year running a dedicated technology-matching track for growth-stage tech SMEs.

Organizing Committee

The committee met regularly over several months to plan the program, recruit speakers and sponsors, and stand up the new Global R&D Partnership and Networking Program.

Chair



Jeho Park

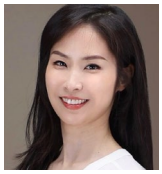
Claremont McKenna College

Co-Chairs



Deok-Ho Kim

Workshop Program Johns Hopkins University



Jeniffer Cho

Pitch Competition Solaris Venture Partners



Martin Jun

Innovation Showcase Purdue University



Kyeong Ho Yang

Fundraising/ Networking KITEE, KoAm Partners



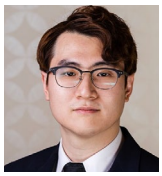
Kevin Kim

General Director, PR/Web/Social Media Brave Turtles



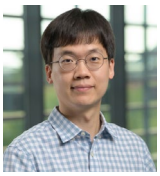
Joonyul Kim

Director, Workshop Program, Johns Hopkins University



James Han

Director, Pitch Competition Harvard Medical School



Hyunseok Kim

Director, Showcase Demo, University of Illinois, Urbana-Champaign



Nathan Byun

Director, Networking Program

Program Structure

IES 2026 was organized around four core components with the structure that has proven successful in prior years while introducing the Global R&D Partnership and Networking Program as a new fifth pillar (detailed below).

- IES Workshop — Expert talks and panel discussions across three sessions: Bio/Health, AI/IT, and Investment/Legal/Going Global, plus the Opening Session keynote and fireside chat.
- Startup Pitch Competition (SPC) — Startups pitched live to a panel of investors and industry veterans for cash prizes.
- Networking — An invitation-only Networking Dinner and a Networking Lunch connecting founders, investors, and KSEA's technical community.
- Innovation Showcase Demo — One-day exhibit booths where selected startups and SMEs demonstrated their products directly to UKC attendees.

Global R&D Partnership and Networking Program [New for 2026]

The signature addition to IES 2026 was a dedicated technology-matching track built specifically for growth-stage Korean tech SMEs seeking global R&D collaboration with US academic and research partners. Where past networking events offered general mixing, this program structured direct, curated introductions between company R&D leads and vetted US experts to surface concrete, cross-disciplinary partnership opportunities.

Who it was for: growth-stage Korean technology SMEs and their corporate/R&D leadership, matched against vetted US university and research-institute experts across AI/ICT, Robotics, SaaS, Pharma, Biotech, and Digital Healthcare.

Format: a field-specific R&D collaboration matrix — four technology-field tracks run across two time slots in a 2×2 cross-disciplinary design, so each participating company attended two sessions in the fields most relevant to it, mixing curated 1:1 meetings with small-group networking rounds.

Package benefits:

- Curated 1:1 and small-group meetings with vetted US academic and research experts across the program's core technology fields
- A one-day Innovation Showcase booth (6ft × 30in table, two chairs, tablecloth) to demo technology to all UKC attendees
- Invitation-only access to the IES Networking Dinner and the SPC Networking Lunch
- Two field-specific small-group networking rounds tailored per company
- One complimentary full UKC 2026 registration

Participation: a $3,000 per-company fee, with applications due July 10, 2026 via an online form available at http://bit.ly/UKC_GlobalRnD2026 or by email to entrepreneurship@ksea.org.

The special networking sessions ran as two closed blocks — **Global R&D Networking I** (10:15 AM – 12:00 PM) and **Global R&D Networking II** (1:00 PM – 2:45 PM) — both held in Oakmont A/B on Friday, August 7, and limited to registered companies and invited participants.

Workshop Highlights

Opening Session — Fireside Chat

- John Ha, CEO, Bear Robotics — "***From Restaurant Floor to Robot Fleet: Building Bear Robotics***"

Workshop I · Bio/Health

- Hongpyo Lee, CTO/Co-founder, Medic Lifescience
- Chaemin Lim, CTO/Co-founder, Coiled Tx
- Sanghyeok Park, Associate Director of Research, Institute of Cannabis Research (CSU-Pueblo)

Workshop II · AI/IT

- Heonmin Lim, Senior Development Manager, Microsoft
- Taehyun Kim, Founder & CEO, Handiers Inc.
- Saesoon Kim, Independent — quantum technology

Workshop III · Investment, Law & Going Global

- Jaekwon Son, Founder & CEO, The Miilk
- Jon Albo, VC, Plug and Play
- Hyunho Park, IP Lawyer, McCarter & English, LLP
- Peter Bae, CEO & Executive Director, KIC Silicon Valley
- Woojung Lee, Associate, SOSV HAX Investment

IES @ KSEA UKC 2026 · ORLANDO, FL

★ NEW IN 2026

Global R&D Partnership and Networking Program

글로벌 R&D 협력 네트워킹 프로그램 (신설)

For growth-stage Korean tech SMEs seeking US academic and research partners.
Structured 1:1 meetings and small-group networking — across AI, Bio, Digital Health, and beyond.

DATE / 일시	VENUE / 장소	FORMAT / 형식	FEE / 참가비
Aug 6 – 8, 2026 2026년 8월 6일–8일	**Orlando, FL** UKC 2026 · USA	**1:1 + Small Group** 4 field sessions · 2 per company	**$3,000** per company · 기업당

Program Summary 프로그램 개요

The Global R&D Partnership and Networking Program is a brand-new initiative for growth-stage Korean tech SMEs seeking global R&D collaboration. Structured 1:1 meetings and small-group networking sessions connect Korean company leaders and R&D executives with US academic and research experts — both in-field and across complementary fields.

Each company participates in **two sessions** across four technology fields, designed in a 2×2 format (e.g. Bio + AI, Bio + Robotics) to unlock cross-disciplinary partnerships.

성장기 기술 중소벤처기업 대표와 R&D 관계자를 위한 분야별 1:1 미팅 및 소그룹 네트워킹. 4개 기술 분야 세션 (2×2 구성), 기업당 2개 세션 참가 가능.

What's Included 포함 혜택

Field-Specific R&D Collaboration
분야별 R&D 협력 네트워크 매칭

Curated 1:1 meetings and small-group sessions with vetted US academic and research experts across the four core technology fields. Designed to surface concrete partnership opportunities — not just introductions.

AI / ICT · Robotics · SaaS · Pharma · Biotech · Digital Healthcare

PACKAGE BENEFITS

- Innovation Showcase — 1-day booth operation 이노베이션 쇼케이스 · 1일 부스 운영
- Field-specific 1:1 meetings + 2 small-group networking sessions
  분야별 1:1 미팅과 관련 분야 네트워킹 2회
- IES Dinner Networking & SPC Networking Lunch access + 1 complimentary UKC registration
  IES 만찬 · SPC 런치 참가 · UKC 등록 1인 무료

PARTICIPATION FEE · 참가비 per company · 기업당 — **$3,000**

Included Programs 함께 제공되는 프로그램

INNOVATION SHOWCASE

1-Day Booth Exhibition
기업 데모 & 혁신 기술 전시

- Demo your technology, products, and services to all UKC attendees
- 6 ft x 30 inch table, two chairs, and basic tablecloth provided
- 1일 데모 부스를 통한 프로모션과 추가 네트워킹 기회 제공



NETWORKING SESSIONS

Dinner + Lunch + Small Groups
네트워킹 만찬 · 런치 · 소그룹 세션

- **IES Networking Dinner** — Invitation-only evening with investors, entrepreneurs, and technologists
- **SPC Networking Lunch** — Connect with pitch judges and KSEA experts
- **Small-group Sessions** — 2 field-specific networking rounds per company



KSEA Korean-American Scientists & Engineers Association

Contact: **entrepreneurship@ksea.org** | website: **https://ies.ksea.org**

Global R&D Partnership and Networking Program Flyer

KSEA UKC 2026 · ORLANDO, FL

IES 2026 Program Booklet

제8회 혁신·창업 심포지엄 · 프로그램 북릿

August 6 – 8, 2026 · Royal Melbourne (Workshop) / International Ballroom & Royal Dublin (Demo)

Thursday, August 6, 2026 2026년 8월 6일 (목)

IES Innovation Showcase Demo
10:15 AM – 6:45 PM (All Day)
International Ballroom & Royal Dublin

IES Opening Session
3:15 PM – 4:15 PM
Royal Melbourne
- Opening Remarks: **박제호**, IES Chair
- Congratulatory Remarks: **윤용규**, KSEA President
- Sponsor Introduction
- Fireside Chat with **하정우 대표**, CEO, Bear Robotics
  "From Restaurant Floor to Robot Fleet: Building Bear Robotics"

IES Workshop I — Bio / Health
4:20 PM – 5:30 PM
Royal Melbourne
- **이홍표** (CTO, Co-founder), Medic Lifescience
  "From Functional Genomics to Precision Oncology: Building a Platform That Translates Biology into Medicines"
- **임채민** (CTO, Co-founder), Coiled Tx
  "How We Outlasted the Hype: A Small Biotech's Playbook"
- **박상혁** (Associate Director of Research), Institute of Cannabis Research (ICR) at Colorado State University-Pueblo
  "Cannabis from Prohibited Drug to Therapeutic Discovery"

IES Workshop II — AI / IT
5:35 PM – 6:45 PM
Royal Melbourne
- **임헌민** (Senior Development Manager), Microsoft
  "A First-Hand View (25 Years @Microsoft) — AI in the Real World"
- **김태현** (Founder, CEO), Handiers Inc.
  "Building an AI-Native Company: The Handiers & NextPros Story"
- **김새순**, Independent
  "The Emerging Quantum Technology Stack: From Hardware to AI Applications"

Scan to get
Real-time transcript/translation by Tiro,
Program updates,
Participants information and more

Friday, August 7, 2026 2026년 8월 7일 (금)

IES Global R&D Networking I
10:15 AM – 12:00 PM
Oakmont A/B · **Invitation Only**
Closed Session for Registered Companies and Invited Participants

IES Global R&D Networking II
1:00 PM – 2:45 PM
Oakmont A/B · **Invitation Only**
Closed Session for Registered Companies and Invited Participants

IES Workshop III — Investment, Law & Going Global
3:15 PM – 4:50 PM
Royal Melbourne
- **손재권** (Founder & CEO), The Miilk
  "Korea's ₩5,000 Trillion Bet: Capital, Power, and the AI Infrastructure Race"
- **Job Albo** (VC, Early Stage Investor), Plug and Play
  "Inside a Global Venture Capital Firm: Supporting Startups Entering the US Market"
- **박현호** (IP Lawyer), McCarter & English, LLP
  "Patent and Trade Secret Topics That Every Korean-American Professional Needs to Know"
- **배정용** (CEO & Executive Director), KIC Silicon Valley
  "From Seoul to Silicon Valley: A Practical Playbook for Korean Startups Entering the US Market"
- **이우정** (Associate), SOSV HAX Investment
  "Building Hard Tech Is Hard"

Startup Pitch Competition
5:00 PM – 6:45 PM
Royal Melbourne

Saturday, August 8, 2026 2026년 8월 8일 (토)

UKC Closing & IES SPC Awards
10:15 AM – 12:00 PM
National Ballroom

IES Networking Lunch
1:00 PM – 3:00 PM
TBD · **Invitation Only**

SPONSORS & PARTNERS

KSEA Korean-American Scientists & Engineers Association

Contact: **entrepreneurship@ksea.org** | website: **https://ies.ksea.org**

Program Schedule (Booklet)

Global R&D Program Participant Companies

Twenty-one companies participated in the Global R&D Partnership Program, spanning AI/ICT, biotech & pharma, digital healthcare, robotics & automation, SaaS & platforms, materials & manufacturing, aerospace & mobility, and energy & storage.

- **StellarCube** — AI/ICT, Biotech, Digital Healthcare
- **YOUTH BIO GLOBAL** — Biotech & Pharma, Digital Healthcare
- **Curome Biosciences** — Biotech & Pharma
- **OZOMETA** — AI/ICT, SaaS & Platforms, Materials & Manufacturing
- **BestTurn Inc.** — AI/ICT, SaaS & Platforms
- **FLY TO Inc.** — AI/ICT, SaaS & Platforms, Aerospace & Mobility
- **SpeedFloor** — Robotics & Automation
- **BioArchers** — Biotech & Pharma
- **CAN-Therapy Inc.** — Biotech & Pharma
- **DKMTech** — AI/ICT, Materials & Manufacturing
- **BeauBrain Healthcare** — AI/ICT, Digital Healthcare
- **LITIV Inc**. — AI/ICT, Digital Healthcare
- **SoftPuzzle Inc.** — AI/ICT, Robotics & Automation, SaaS & Platforms, Biotech & Pharma
- **STRATIO, INC.** — AI/ICT, Materials & Manufacturing
- **ROSAIC Co., Ltd.** — AI/ICT, Robotics & Automation
- **BEI Co., Ltd.** — Energy & Storage, Materials & Manufacturing
- **Samyang Comtech Co., Ltd.** — Materials & Manufacturing
- **innobase co., ltd.** — AI/ICT, SaaS & Platforms
- **Nextron Corporation** — Materials & Manufacturing
- **ANPOLY** — Biotech & Pharma, Materials & Manufacturing
- **ESOL** — AI/ICT, Robotics & Automation, Digital Healthcare
- **ELCYCER Co., Ltd** — AI/ICT, Materials & Manufacturing, Aerospace & Mobility

Startup Pitch Competition & Innovation Showcase

The Startup Pitch Competition gave founders the chance to pitch live to a panel of investors and experienced entrepreneurs, competing for cash awards. Results and winners will be added to this report following the UKC Closing & IES SPC Awards ceremony.

The one-day Innovation Showcase Demo ran continuously in the International Ballroom and Royal Dublin, giving SPC finalists, invited startups, and Global R&D program participants a shared floor to exhibit their products directly to UKC attendees.

Startup Pitch Competition Finalists and Awardees

Startup Name	Presenter Name	Ranking	Prize
SpeedFloor	Dowon Kim	1st	$5,000
UpcycleX Inc.	Wanghee (Wren) Lee	2nd	$3,000
Wis Medical	Josh Lee	3rd	$1,000
BestTurn Inc.	Wonjin Choi	3rd	$1,000
COILS Co., Ltd.	Sungryul Huh		
EDmicBio inc.	Dong-Heon Ha		
FLYTO	Haejin Park		
OZOMETA	Changgyu Kim		
StellarCube	Sangmyung Hong		
Team Gencow	Kevin Choi		

Networking Events

- IES Networking Dinner (invitation only) — high-touch networking among investors, entrepreneurs, and technologists on Friday evening in the National Ballroom.
- IES Networking Lunch (invitation only) — informal exchange for competition finalists, judges, and KSEA's senior scientists and technologists following the UKC Closing Session on Saturday.
- Global R&D Networking I & II — curated one-on-one and small-group R&D networking and matchmaking sessions, described above.



Global R&D Networking Photos

Sponsors & Partners

IES 2026 was made possible by the generous support of the following sponsors and partners.



FIRE Symposium

FIRE Symposium After Action Report

Theme: “Connect Today. Build Beyond. Ignite Tomorrow.”

Dates: August 6–8, 2026

Distribution: KSEA Leadership / UKC Executive Committee

UKC FIRE 2026 convened 43 confirmed attendees across four participation avenues under the theme “***Connect Today. Build Beyond. Ignite Tomorrow***,” anchored by a keynote from Nobel Laureate Dr. William D. Phillips. The program introduced the AI Build Challenge as a new avenue in its debut year, which landed as one of the highest-rated sessions of the symposium (9.16/10). This year's planning cycle centered on three strategic priorities:

- ***AI Adoption:*** FIRE launched “Ignis,” an AI chatbot supporting participants with travel and session-related inquiries. The AI Build Challenge's debut products have gained traction and helped all of the participants in a meaningful way.
- ***Branding & Deliverables Portfolio***: Despite FIRE's supporting quota being cut roughly in half from the prior year (60 to 30), the team grew social media followers and engagement by 130%.
- ***Team Building:*** The organizing committee held regular organizer office hours throughout the planning cycle to strengthen internal coordination and cross-avenue knowledge-sharing.





Program Overview

- **Mentoring Roundtables**—small-group, track-based discussions across six focus areas, pairing participants with mentors from industry and academia.
- **AI Build Challenge (AIBC)**—new for 2026: a no-code/low-code/"***vibe-code***" hackathon where teams of 2–3 built an AI-powered prototype over a 7-day sprint and demoed it live for judged feedback.
- **Career Flash Talk (CFT)**—5-minute talks on career journeys and leadership lessons, evaluated on content, professionalism, audience engagement, and use of visual aids.
- **Career & Research Poster Presentation** – Poster overviews with one-on-one attendee engagement, judged via a mix of judge evaluation and participant votes.

Organizing Committee

Chair



Taegon Jay Lee

Palantir AI & Data Science Manager at Department of War

Co-Chair



Riky Bae

Manufacturing Engineer at PECNA

Co-Chair



Judy Seohyun Kim

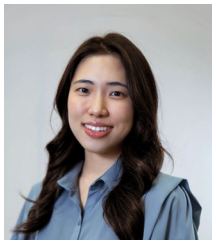
Co-Founder & CEO at K-Leap Global

Programs & Networking



Lucy Lee

Pharmacist, Ph.D. student at UTHealth Houston



Helen Mah

Software Engineer at Dell Technologies



Youra Shin

Ph.D. Candidate at New Jersey Institute of Technology

Admin and Communications



Lanette Choi

Graduate Student at Rush University



Daniel Kim

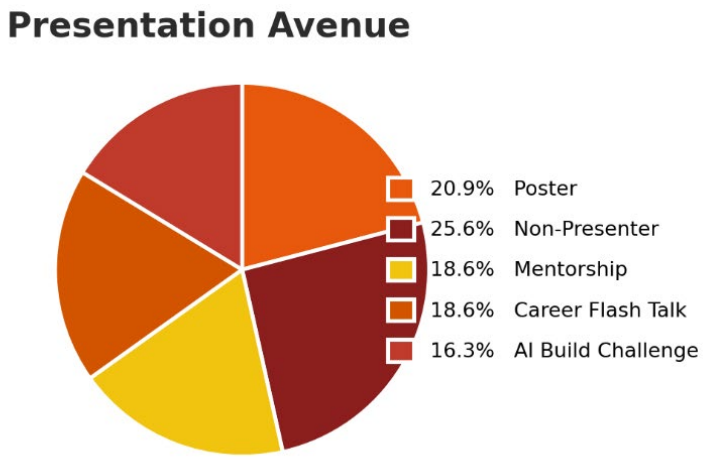
Undergraduate Student at University of Wisconsin-Madison

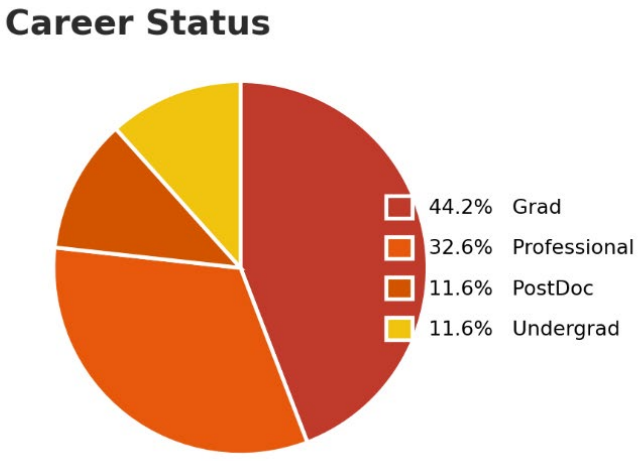
Schedule at a Glance

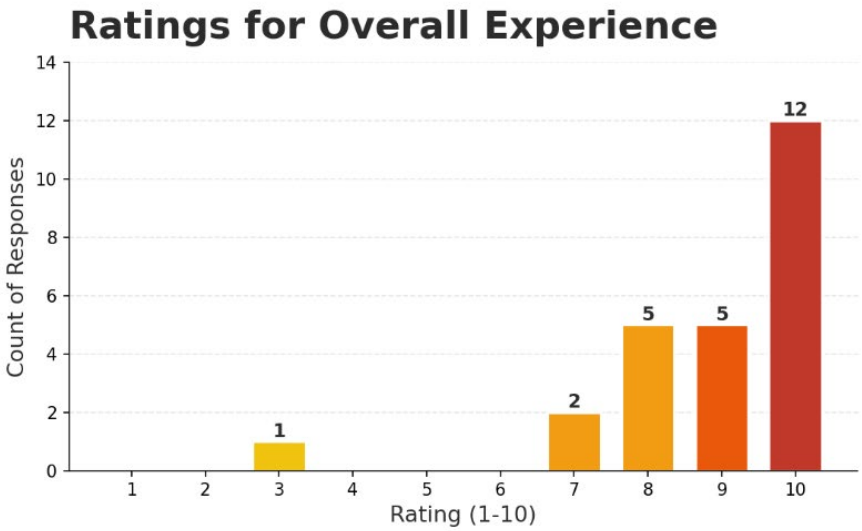
Session	Day / Time	Location
FIRE Symposium Opening	Thursday, Aug 6, 5:00 – 5:55 PM	ChampionsGate
Career Flash Talk	Thursday, Aug 6, 5:55 – 6:45 PM	ChampionsGate
AI Build Challenge	Friday, Aug 7, 3:15 – 4:15 PM	ChampionsGate
Mentoring Roundtables	Friday, Aug 7, 4:15 – 5:00 PM	ChampionsGate
Career Poster Presentation	Friday, Aug 7, 5:00 – 6:40 PM	International Ballroom II
Closing & Award Ceremony	Saturday, Aug 8, 9:00 – 9:50 AM	ChampionsGate

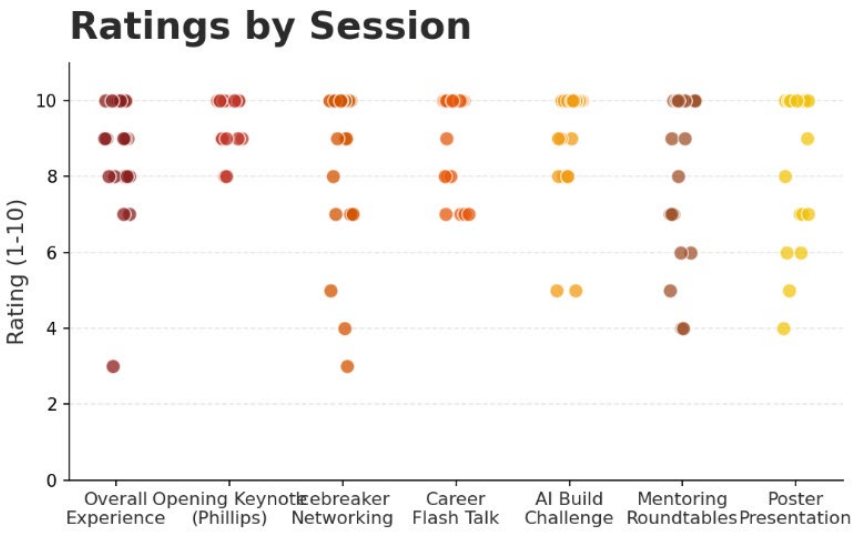
Attendance & Engagement Statistics

Based on the Master Presenter List and Master Non-Presenter List (Application Review workbook) and the Post-Conference Evaluation Survey (25 responses), UKC FIRE 2026 confirmed 43 total attendees: 32 presenters across four avenues and 11 non-presenters.



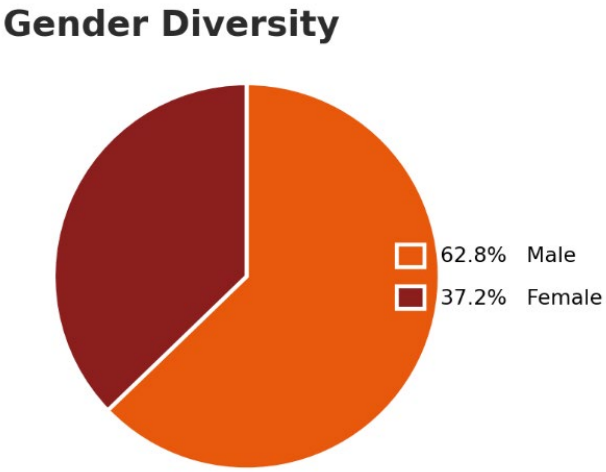


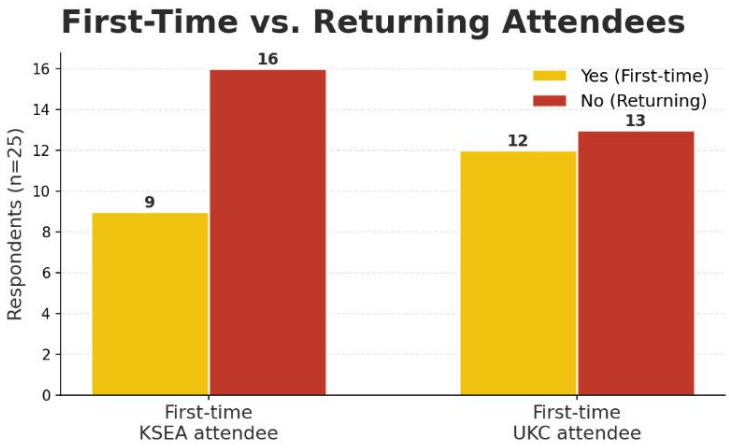


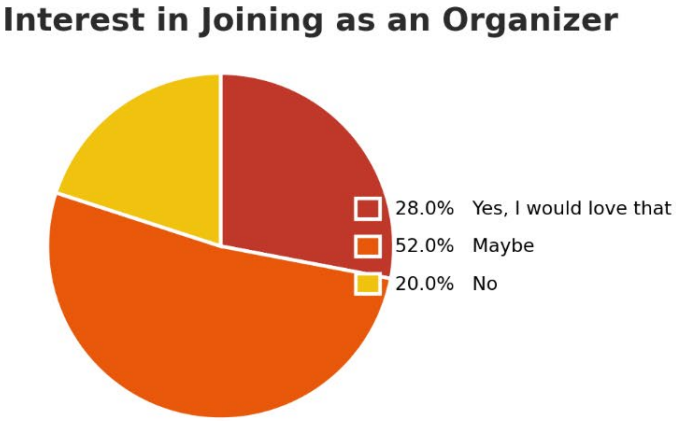


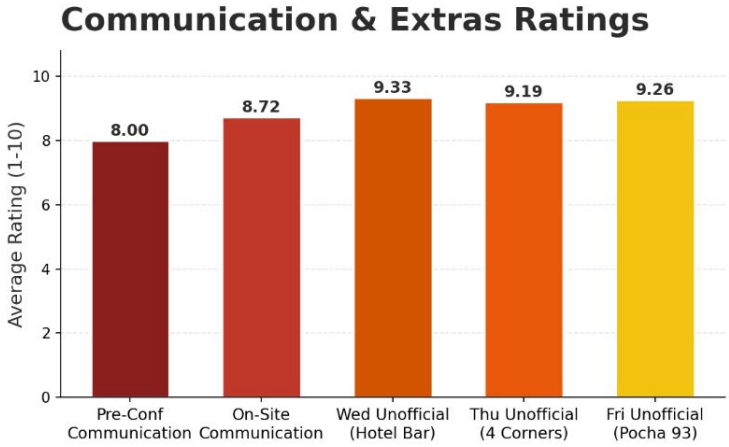
Note: Overall Experience averaged 8.88/10 across 25 respondents (68% rated it a 9 or 10). The Opening Keynote scored highest (avg. 9.64); Mentoring Roundtables scored lowest (avg. 8.48), consistent with written feedback requesting clearer instructions and more session time.

Additional Attendee Insights









Note: Nearly half of survey respondents (48%) were first-time UKC attendees, suggesting healthy reach beyond the returning core. 80% of respondents expressed at least some interest ("Yes" or "Maybe") in future organizing—a strong volunteer pipeline for FIRE 2027 recruitment. Geographically, the 43 confirmed attendees represented 39 unique institutions/organizations across 19+ U.S. states plus international representation from South Korea.

Session-by-Session Recap

I. FIRE Symposium Opening

Thursday, August 6, 5:00–5:55 PM, ChampionsGate. Session Chair: Taegon Jay Lee. Welcoming remarks were followed by the opening keynote from Dr. William D. Phillips and an Icebreaker Bingo networking activity led by Riky Bae to help attendees connect before the main program.







II. Career Flash Talk (CFT)

Thursday, August 6, 5:55–6:45 PM, ChampionsGate
Session Lead: Lucy Lee
Nine presenters delivered 5-minute talks, each followed by audience Q&A.

Time	Presenter	Talk Title
6:00	Lanette Choi	Never Stop Being a Student: My Lessons from Korean Cardiac Surgery
6:05	Hoi Joong “Dominic” Youn	From Outsider to Connector: Building Beyond Boundaries
6:10	Kyu Won “Kelly” Lee – First Place	Plot Twist: You Already Have the Advantage
6:15	Hyoungjin “Harry” Park	Bridging Bench and Beside: Interdisciplinary Paths in Science and Medicine
6:20	Yanghee Im	Making the Most of Your PhD: Choosing the Right Lab, Seizing Opportunities, and Standing Out
6:25	Jinmog Han	From Engineering to Human-Centered Design
6:30	Sol Choi, PhD – Second Place	Owning Your Growth in Uncertainty
6:35	SoYoung Ahn	From the Sideline to the Laboratory: My Journey from Athletic Trainer to Researcher
6:40	Dr. Jongwoo Lee	With, Not For: Inclusive Leadership Lessons from STEM Students with Disabilities



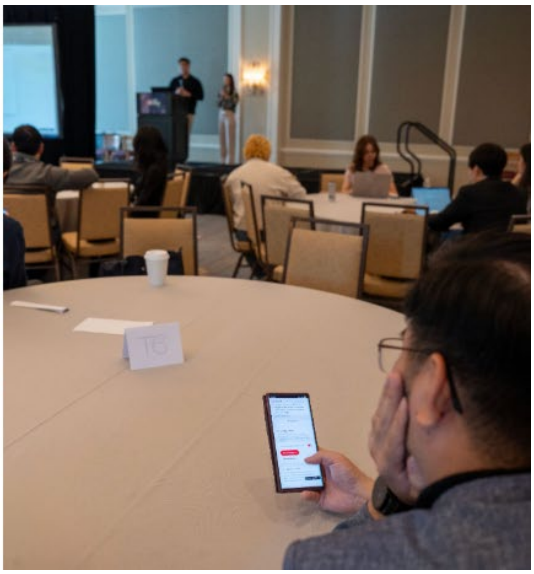



III. AI Build Challenge (AIBC)

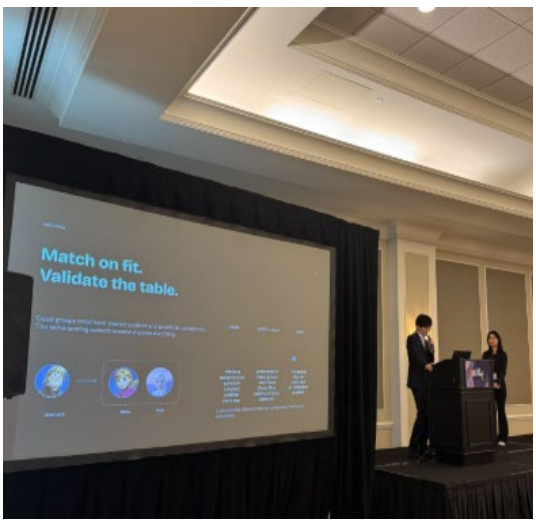
Friday, August 7, 3:15–4:15 PM, ChampionsGate
Session Chair: Helen Mah
Three teams presented AI prototypes built over a 7-day sprint, evaluated on innovation, technical implementation, design, impact, viability, and presentation.

Slot	Team	Members	Product
3:20-3:35	OrlaP (“Icebreaker”)	Sunghwan (Sunny) Cho, Jiwon Hwang	Conference companion app: shared-meal matching, AI-scored table groupings, airport ride pooling
3:40-3:55	Knect	Alison Park, Nathan Chung	AI networking copilot: event profiles, two-track AI matching, voice-recorded conversation recaps
4:00-4:15	Haechi Labs – First Place	Sunu Kim, Clara Kim, Daniel Lee	OpenUKC / OpenFIRE: full conference app with AI profiles, smart match intros, QR check-in alerts, faction-based gamification, sponsor tracking, and a live organizer dashboard









IV. Mentorship Roundtable Program

Friday, August 7, 4:15–5:00 PM, ChampionsGate
Session Chair: Youra Shin
Each mentor opened with a short pitch, followed by a 20-minute interactive discussion.

Track	Session Title	Mentor(s)
T1: Teamwork & Collaboration	Building Strong Teams Through Communication and Collaboration	Subin Lee, Ryan Shin
T2: Leadership Development	From Contributor to Builder: Taking Ownership and Leading What Comes Next	Yaeji Kim, Tony Lee
T3: Career Exploration	Embracing Unexpected Opportunities: Building a Meaningful Career	Terry Kim
T4: AI & Engineering	Building the Future through Advanced Engineering Technologies	Byeongchan Jeong, TJ Park
T5: Research Careers	Beyond the Ph.D.: Navigating Research Careers and Real-World Impact	Hyewon Kang, Seungwon Yoo
T6: Personal Growth & Communication	Understanding Yourself and Others for Personal and Professional Success	Jesse Ha, Jonathan Kim





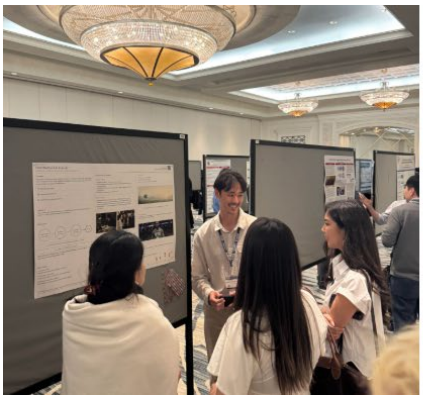


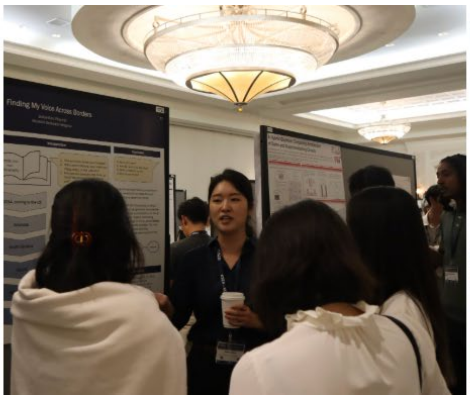


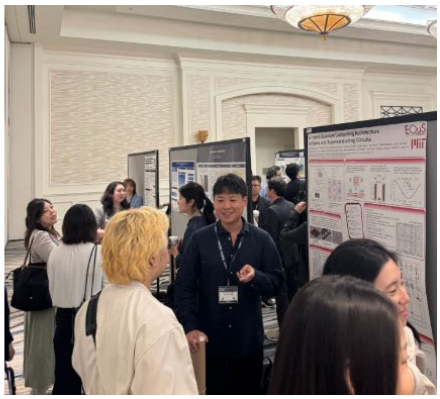
V. Career & Research Poster Presentation

Friday, August 7, 5:00–6:40 PM, International Ballroom II
Session Lead: Riky Bae
Nine presenters shared career and research posters with 5-minute overviews and one-on-one attendee engagement.

Slot	Presenter	Affiliation	Title
FIRE1	**Seunghyeb Ban**	Georgia Institute of Technology 3rd Year Ph.D.	AI-Enabled Wearable Systems for Sleep and Human Health Monitoring
FIRE2	**Yeju Choi**	Korea University 3rd Year B.S	Connecting Today to Build Beyond: My Roadmap as a Global Life Sciences Researcher
FIRE3	**Chiho Im**	Stanford University 3rd Year Ph.D.	Coming Full Circle: Integrating Artificial Intelligence With Science
FIRE4	**Uijeong Jo**	Grady Health System PGY2 Pharmacy Resident	From Residency Showcase to Match Day: My Networking Journey
FIRE5	**Hanlim Kang**	Massachusetts Institute of Technology 4th Year Ph.D.	Presentation Title: A Hybrid Quantum Computing Architecture of Spins and Superconducting Circuits
FIRE6	**Dahye Kim** **2nd Place**	Houston Methodist Hospital Pharmacy Resident	Finding My Voice Across Borders
FIRE7	**Michael Kim**	Johns Hopkins University 2nd Year Masters Student	Researcher Probing the paradoxical relationship between marine diazotrophs and oxygen through controlled hypoxia
FIRE8	**Min Kyu Lee**	University of California, Los Angeles R&D Consultant, 4th Year Ph.D.	From Residency Showcase to Match Day: My Networking Journey
FIRE9	**Jaylen Park** **1st Place**	Kongsberg Maritime Riser & Marine Engineer	What Percentage of Life Is Luck?







VI. Closing & Award Ceremony

Saturday, August 8, 9:00–9:50 AM, ChampionsGate
Session Chairs: Judy Kim, Riky Bae, and Taegon Jay Lee.
Closing remarks were followed by the FIRE Award Ceremony (VISION Awards and FIRE Award) and a final group discussion and closing activity.



Award Winners

- ***AI Build Challenge***
  First Place – Team Haechi Labs (OpenUKC / OpenFIRE): Sunu Kim, Clara Kim, Daniel Lee

- ***Career Flash Talk***
  First Place – Kyu Won "Kelly" Lee, "Plot Twist: You Already Have the Advantage"
  Second Place – Sol Choi, PhD, "Owning Your Growth in Uncertainty"
- ***Career Poster Presentation***
  First Place – Jaylen Park, "What Percentage of Life Is Luck?"
  Second Place – Dahye Kim, "Finding My Voice Across Borders"

Participant Feedback Highlights

25 of 43 attendees (58%) completed the post-conference survey. Key themes:

- Networking and meeting new people was the single most-cited favorite aspect—mentioned in the large majority of open-ended responses, often specifically praising the diversity of academic backgrounds and career stages in the room.
- "*Not just a traditional conference, trying new things with great 'ideas'*"—referencing the AI Build Challenge.
- "*I loved the venue, which was very professional-looking, and the hard work of the organizers!*"
- Constructive feedback clustered around three areas: (1) communication—a few participants cited incorrect information and last-minute emails; (2) AIBC logistics—requests to kick off the challenge earlier (before registration closes) and allow more time to actually use what teams built; (3) Mentoring Roundtables—requests for clearer instructions and more session time, consistent with this avenue's lower average rating

(8.48) relative to other sessions.
- One participant flagged a dinner support request made at registration that wasn't reflected on-site—worth a process check for the 2027 registration-to-fulfillment handoff.

Budget & Logistics Summary

Unlike prior years, no dedicated budget was allocated for FIRE in 2026—the past three-year average FIRE budget was approximately $2,500. Some session-related support items this year were covered directly by organizers and participants out of pocket as a result.

Organizer Meeting Support: up to $25 per organizer for each of 3 planning meetings held prior to the event, plus 1 post-event evaluation town hall meeting (4 supported meetings total per organizer). Meals for all 4 organizer town hall meetings were reimbursed.

FLAG FOR REVIEW: A session-supplies order placed through UKC was not provisioned due to a logistical/human error on UKC's side, requiring the organizing team to improvise an alternative solution on-site.

Key Learnings

- AIBC launched successfully as a new avenue in 2026, replacing the prior year's 3-Minute Idea Pitch format—all three teams delivered working demos built with modern AI tools (Claude Code, Claude Design, and OpenAI Vision) within a 7-day sprint, and it scored well (avg. 9.16/10). Participant feedback suggests starting the challenge earlier in the registration cycle and giving teams a way to actually deploy/use their builds beyond the demo.
- Mentoring Roundtables scored lowest of the four avenues (avg. 8.48/10), with feedback pointing to unclear instructions and insufficient session time—a clear target for 2027 process improvement.
- Networking was overwhelmingly the top-cited highlight in open-ended feedback, ahead of any single session format—worth protecting and expanding unstructured connection time in future planning.
- A few participants flagged communication issues (incorrect info, last-minute emails, a dropped dinner-support request)—preliminary vs. final communications need to be clearly distinguished in all outreach to avoid participant confusion (carried forward from prior planning cycles).

Recommendations for UKC FIRE 2027

- Continue the AI Build Challenge as a permanent avenue given strong team turnout, high satisfaction (9.16/10), and enthusiastic feedback in its debut year.
- FIRE should secure its own dedicated budget or fundraising channel, separate from routing session-supply orders through UKC. This year's supply order was not provisioned due to a logistical/human error on UKC's end, forcing the team to improvise an alternative on-site solution—a dedicated FIRE budget would give the team direct control and a fallback when a shared-process order fails.
- Revisit the Mentoring Roundtables format and instructions—the lowest-rated avenue (8.48/10), with specific requests for clearer guidance and more time per session.
- Build in more structured, facilitated networking opportunities beyond the unofficial evening events, since networking was the top-cited highlight, but a few participants noted it's easy to default to people you already know.
- Audit the registration-to-fulfillment handoff (e.g., dietary/support requests) to prevent items confirmed at registration from being dropped by event day.

Appendix

UKC FIRE 2026 official program booklet
https://drive.google.com/file/d/1e1u_tPawz4T5joq_5np6O-sF_BXvL3D6/view

Distinguished Sponsor Forums

Innopolis Forum

Global Deep tech Commercialization forum

Thursday, August 6 1:00 - 3:00pm Championsgate

INNOPOLIS
KOREA INNOVATION CLUSTER

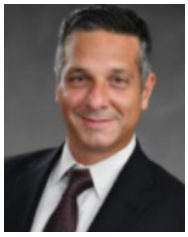
Chair



Hee Kwon Jung

President, Korea Innovation Foundation

Session1 Speakers



Ron Piccolo

CEO, Florida Semiconductor Engine



Sung-Hee Yun

CEO, Erudio Bio



Janice Logan

Partner, Morgan Lewis&Bockius LLP



Paul Sohl

CEO, Florida High Tech Corridor

Session2 Panelists



Ki Jung Kwon

CEO, Narma



Yeonglyeol Park

CEO, Elspes



Woojin Jun

CEO, WIM



Sung-Hee Yun

CEO, Erudio Bio

Time	Title and Speaker
12:30 - 1:00 pm	**Registration & Networking**
1:00 - 1:10 pm	**Welcoming Remarks** Heekwon Jung (President, Korea Innovation Foundation) **Congratulatory Remarks** Yongkyu Yoon (President, KSEA)
1:10 - 2:10 pm	**Session 1: Policy, Strategies, and Founder Insights** Focus: Policy framework and strategies for global expansion 1. Innovative Ecosystem & Synergy (Ron Piccolo, CEO, Florida Semiconductor Engine) 2. The Evolution of the AI Innovation Ecosystem (Sung-Hee Yun, CEO, Erudio Bio, secured $1M from the Gates Foudation in 2025) 3. IP Strategy Trends in the U.S. Market (Janice Logan, Partner, Morgan Lewis&Bockius LLP) 4. Soft Landing Strategies for Deep tech Startups (Paul Sohl, CEO, Florida High Tech Corridor)
2:10 - 2:20 pm	**Coffee Break**
2:20 - 3:00 pm	**Session 2: Breaking Into the U.S. – Challenges & Opportunities** Focus: Case studies and interactive talk concert (6-min pitch + 20-min discussion) 1. Narma (Ki Jung Kwon, CEO) - Certification & Commercialization Insights 2. Elspes (Yeonglyeol Park, CEO) - U.S. Manufacturing Setup & Investment Strategies 3. WIM (Woojin Jun, CEO) - Local Networking & Partnership Strategies 4. Erudio Bio (Sung-Hee Yun, CEO) - U.S. Incorporation & Global Scaling Experience
3:00- 3:10 pm	**Closing Ceremony**

1. About the Forum

The Innopolis Forum (Global Deep Tech Commercialization Forum) was held to establish global commercialization strategies, foster U.S. market entry partnerships, and exchange policy frameworks for deep-tech startups. Bringing together government leaders, industry experts, and startup founders, the forum facilitated actionable discussions on scaling deep-tech innovations internationally.

2. Introduction and Welcoming Remarks

- Welcoming Remarks: Hee Kwon Jung (President, Korea Innovation Foundation)
- Congratulatory Remarks: Yongkyu Yoon (President, KSEA)

3. Presentations (Session 1)

Session 1 focused on policy frameworks, IP protection, and soft-landing strategies essential for deep-tech startups expanding globally:

1. Innovative Ecosystem & Synergy — Ron Piccolo (CEO, Florida Semiconductor Engine)
2. The Evolution of the AI Innovation Ecosystem — Sung-Hee Yun (CEO, Erudio Bio)
3. IP Strategy Trends in the U.S. Market — Janice Logan (Partner, Morgan Lewis & Bockius LLP)
4. Soft Landing Strategies for Deep Tech Startups — Paul Sohl (CEO, Florida High Tech Corridor)

4. Panel Discussion (Session 2)

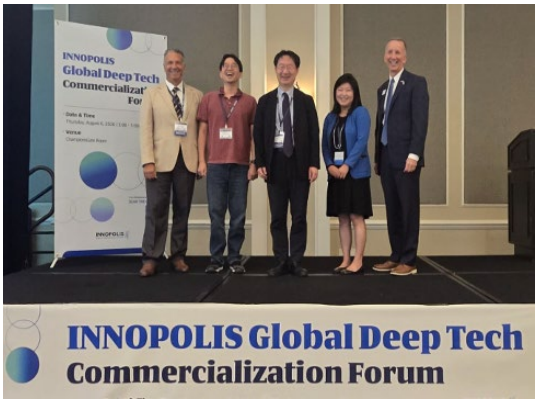
Session 2 featured practical U.S. market expansion case studies, consisting of 6-minute startup pitches followed by a 20-minute interactive talk concert:

- Narma (Ki Jung Kwon, CEO): Insights on global certification and commercialization.
- Elspes (Yeonglyeol Park, CEO): Establishing U.S. manufacturing bases and attraction of global investment.
- WIM (Woojin Jun, CEO): Local networking and building strategic partnerships.
- Erudio Bio (Sung-Hee Yun, CEO): U.S. incorporation experience and scaling strategies (including securing $1M from the Gates Foundation in 2025).

5. Feedback or Next Plan

- Continuous follow-up support for participating deep-tech startups regarding U.S. incorporation and IP consulting.
- Strengthening collaboration networks with the Florida High Tech Corridor, Florida Semiconductor Engine, and global law firms/VCs.
- Expansion of joint PoC and global commercialization support programs for Korean innovation clusters.

6. Group photos










Welcome Remarks
Hee Kwon Jung


Congratulatory Remarks
Yong Kyu Yoon


The Florida
Semiconductor Engine



NRF Forum

NRF(ANCHOR) - NSF(RIE) Regional Innovation Session

Thursday, August 6 1:00 - 3:00pm Olympic

KUSCO NRF
KOREA-U.S. SCIENCE COOPERATION CENTER
National Research Foundation of Korea

Host



Won Hwa Hong

National Research Foundation of Korea (NRF)

Chair



Ohbong Kwon

Associate Professor
New York City College of Technology

Presenters



Dong Seob Kang

Director General of NRF/KUSCO



Tyler Kim

Booz Allen



Hyun-Soo Ra

Kyungpook National University



John Allgair

CTO BRIDG
CTO, NSF Florida Semiconductor Engine



Glenn Oliver

Florida Site Lead
imec USA Nanoelectronics Design Center

Through this session, we seek to foster strategic partnerships between regional innovation initiatives in Korea and the United States, advancing collaborative frameworks that contribute to mutually beneficial growth in both countries.

- Specifically, the session will highlight semiconductor-focused projects supported by the National Research Foundation of Korea (NRF)'s "***ANCHOR***" program and the U.S. National Science Foundation (NSF)'s "***Regional Innovation Engine (RIE)***" program. By sharing insights and experiences from exemplary regional innovation initiatives, we aim to build a sustainable international network and explore new opportunities for cross-border collaboration, including researcher mobility, joint research, and industrial partnerships between Korea and the United States.

Time	Title and Speaker
1:00 - 1:05 pm	**Welcome Remarks** Won Hwa Hong (President, NRF)
1:05 - 1:20 pm	**Introduction : Outlines of the NRS's ANCHOR and NSF's RIE** Dong Seob Kang (Director General of Directorate for International Affairs, NRF)
1:20 - 1:50 pm	**Case Studies** **1. ANCHOR 1 - Hanseo University, taking a leap to the world together with the region** Tyler Kim (Researcher, Booz Allen) **2. ANCHOR 2 - KNU semiconductor industry-academia collaboration** Hyun-Soo Ra (Assistant Professor, Kyungpook National University)
1:50 - 2:20 pm	**Case Studies** **- (RIE 1) Regional Economic Development: Growing an Advanced System Integration and Packaging Manufacturing Base** John Allgair (CTO, BRIDG) **- (RIE 2) Global Semiconductor R&D: The Florida Connection** Glenn Oliver (Florida Site Lead, imec USA Nanoelectronics Design Center)
2:20 - 2:50 pm	**Panel Discussion, Q&A Session**
2:50 - 3:00 pm	**Wrap-up and Photo**

1. About the Forum

Through this session, NRF and NSF sought to foster strategic partnerships between regional innovation initiatives in Korea and the United States, advancing collaborative frameworks that contribute to mutually beneficial growth in both countries. Specifically, the session highlighted semiconductor and aerospace-focused projects supported by the National Research Foundation of Korea (NRF)'s "***ANCHOR***" program and the U.S. National Science Foundation (NSF)'s "***Regional Innovation Engine (RIE)***" program.

On the Korean side, the ANCHOR consortia in semiconductors and aerospace — Kyungpook National University and Hanseo University — participated, while on the U.S. side, the Florida semiconductor consortia BRIDG and imec took part. The two sides presented case studies on regionally-driven semiconductor development and explored mutual exchange and future collaboration opportunities. By sharing insights and experiences from these exemplary regional innovation initiatives, the session aimed to build a sustainable international network and explore new cross-border collaboration opportunities between Korea and the United States, including researcher mobility, joint research, and industrial partnerships.

2. Introduction and Welcoming Remarks

- Welcome Remarks (President, NRF) / Congratulatory Remarks (Yongkyu Yoon, President, KSEA)
- Introduction: Outlines and policy directions of NRF's ANCHOR and NSF's RIE (Director General, Directorate for International Affairs, NRF)

The session opened with welcoming remarks from the NRF President, followed by congratulatory remarks from KSEA President Yongkyu Yoon (Professor, University of Florida).

The Director General for International Affairs then introduced the program overview and policy direction of both NRF's ANCHOR and NSF's RIE initiatives, framing the shared goal of regional innovation and workforce development.

3. Presentations

3.1 Case Studies I

- ANCHOR 1 - Hanseo University, taking a leap to the world together with the region
  Tyler Kim (Researcher, Booz Allen)
- ANCHOR 2 - KNU semiconductor industry-academia collaboration
  Hyun-Soo Ra (Assistant Professor, Kyungpook National University)

3.2 Case Studies II

- RIE 1 - Regional Economic Development: Growing an Advanced System Integration and Packaging Manufacturing Base / John Allgair (CTO, BRIDG)
- RIE 2 - Global Semiconductor R&D: The Florida Connection / Glenn Oliver (Florida Site Lead, imec USA Nanoelectronics Design Center)

4. Panel Discussion

A comprehensive panel discussion was held on ways to connect and strengthen cooperation between the ANCHOR and RIE programs. Panelists and attendees from both countries showed strong interest in the session, with several U.S. university representatives requesting to be connected with relevant Korean universities in their fields. NRF proposed that NRF and NSF establish the institutional foundation for cooperation, while individual consortia pursue autonomous, self-directed collaboration on top of that framework. Given that both programs engage a wide range of regional stakeholders — universities, research institutes, industry, and civil society — participants expressed optimism for dynamic, mutually beneficial cooperation going forward.

5. Feedback or Next Plan

Momentum for consortium-to-consortium cooperation

Following the session, the Daegu ANCHOR consortium (Kyungpook National University, etc.) and the Florida Semiconductor RIE consortium (University of Florida, University of Central Florida, imec, BRIDG, etc.) discussed pursuing semiconductor-related collaboration, building on existing industry-academia partnerships (including cooperation with Korean firms) and international networks. Both sides found common ground on the pivotal role of Kyungpook National University and the University of Florida in leading their respective consortia, and expressed interest in exploring concrete cooperation measures such as student exchange, joint curriculum development, and joint research.

Expanded matching potential

In video remarks, the NSF Assistant Director for Technology, Innovation and Partnerships (TIP) emphasized that cooperation between NRF's ANCHOR and NSF's RIE programs can connect the two countries' regional innovation ecosystems and drive mutually beneficial growth. With 12 new RIE consortia recently selected — expanding into fields (e.g., quantum) not covered by the first cohort of 9 RIE consortia — the scope for cross-program collaboration has broadened. Notably, the University of Connecticut, which leads the newly selected Quantum RIE in Connecticut, has requested matching with ANCHOR consortia capable of collaborating in quantum and adjacent fields.

6. Group photos



Hyundai Motor Chung Mong-Koo Foundation Forum

Solving Social Challenges: Sci-Tech Innovation Driven by Next-Generation Leaders

Thursday, August 6 1:00 - 3:00pm Augusta

현대차 정몽구 재단
Chung Mong-Koo Foundation

Chair



Gloria Kim

University of Florida

Presenters



Yuri Kang

Pohang University of Science and Technology



Kyunghyun Kim

Hongik University



Yurim Choi

Pohang University of Science and Technology

Speaker



William Phillips

Nobel Laureate in Physics
Fellow, NIST Distinguished University Professor, University of Maryland

Time	Title and Speaker
1:00 - 1:05 pm	**Opening & Introduction** Gloria Kim (University of Florida)
1:05 - 1:10 pm	**Introduction of Hyundai Motor Chung Mong-Koo Foundation(Video)**
1:10 - 1:22 pm	**Dual-Responsive Gelatin Microspheres for Ultrasound-Triggered Drug Release** Yuri Kang (Pohang University of Science and Technology)
1:22 - 1:34 pm	**Design of Non-Flammable, Clay-Like Solid Electrolytes via Lewis Acid-Base Interactions** Kyunghyun Kim (Hongik University)
1:34 - 1:46 pm	**Bridging Mechanical Discontinuity: Bioinspired Stress-Dissipating Interface for Human-Integrated Materials and Devices** Yurim Choi (Pohang University of Science and Technology)
1:46 - 2:30 pm	**Conversation with Nobel Laureate Dr. William D. Phillips (Graduate Students & Postdocs Only; Advance RSVP Required)** Moderated by Gloria Kim (University of Florida)
2:30 - 2:35 pm	**Concluding Remarks / Photo Session** Moderated by Gloria Kim (University of Florida)

1. About the Forum

The Hyundai Motor Chung Mong-Koo Foundation is at the forefront of nurturing science and technology talent to address complex societal challenges. In alignment with this mission, this year's forum adopts the theme "Solving Social Challenges: Sci-Tech Innovation Driven by Next-Generation Leaders" to showcase how the innovative research outcomes of three foundation scholars—bridging imagination and innovation—can translate into tangible solutions to real-world problems. This forum, featuring foundation scholars as primary presenters, transcends traditional academic knowledge sharing. Centered on the core concept of "solving future challenges," it serves as a pivotal platform to articulate the foundation's philosophy and purpose of cultivating future talent through science and technology scholarships on the global stage.

2. Introduction and Welcoming Remarks

Gloria Kim of the University of Florida served as the chair and opened the forum with introductory remarks on its objectives. The program also included an introduction to the Hyundai Motor Chung Mong-Koo Foundation and its commitment to fostering future talent in science and technology.

3. Presentations

The presentation session featured research achievements by Hyundai Motor Chung Mong-Koo Foundation scholars from leading universities.

Yuri Kang of Pohang University of Science and Technology presented research on dual-responsive gelatin microspheres for ultrasound-triggered drug release, introducing a novel biomedical approach for controlled therapeutic delivery.

Kyunghyun Kim of Hongik University presented a study on the design of non-flammable, clay-like solid electrolytes through Lewis acid-base interactions, highlighting the potential for safer energy storage systems.

Yurim Choi of Pohang University of Science and Technology introduced research on bioinspired stress-dissipating interfaces that bridge mechanical discontinuities in human-integrated materials and devices. The presentation demonstrated how advanced material design can improve the durability and functionality of wearable and biointegrated technologies.

Collectively, the presentations illustrated how innovative research conducted by next-generation scholars can be translated into practical solutions for real-world challenges.

4. Featured Conversation

A special session featured a conversation with Dr. William D. Phillips, Nobel Laureate in Physics, moderated by Gloria Kim. The discussion provided an engaging exploration of scientific discovery, innovation, and the broader social impact of research. Over the course of an hour, the conversation blended humor, encouragement, and profound insights, creating an inspiring atmosphere for participants. Drawing from his personal experiences as a scientist, Dr. Phillips shared reflections on curiosity-driven research, the value of perseverance, and the importance of embracing unexpected opportunities in scientific careers. His thoughtful observations, combined with moments of wit and candid dialogue, offered valuable inspiration for young researchers and scholars aspiring to make meaningful contributions through science and technology.







5. Group Photos









Korea – US Quantum & AI Application Forum

Thursday, August 6 1:00 - 3:00pm Colonial B

Chair



In-Saeng Suh

Oak Ridge National Laboratory

Presenters



Joongheon Kim

Korea University



Saesun Kim

Sygaldry Technologies



Seung-Wook Baek

National Research Foundation of Korea



Doyeol Ahn

Singularity Quantum Inc. & University of Seoul



Sean Oh

PsiQuantum

Time	Title and Speaker
1:00 - 1:02 pm	**Opening Remarks**
1:02 - 1:17 pm	**National Quantum Strategy and Program** Seung-Wook Baek (National Research Foundation of Korea)
1:17 - 1:32 pm	**Quantum AI and Software: Current Status and Future Trends** Joongheon Kim (Korea University)
1:32- 1:47 pm	**Quantum Computing and Computational Fluid Dynamics for Precision Medicine** Doyeol (David) Ahn (Singularity Quantum, University of Seoul)
1:47 - 2:02 pm	**AI-driven Distributed QAOA for Materials Science** In-saeng Suh (Oak Ridge National Laboratory)
2:02 - 2:17 pm	**Fault-Tolerant Quantum Computing for Commercial Impact** Sean Oh (PsiQuantum)
2:17 - 2:32 pm	**Quantum and AI: Asking the Right Question** Saesun Kim (Sygaldry Technologies)
2:32 - 2:57 pm	**Panel Discussion: Quantum Application Research and Korea-US Collaboration** In-saeng Suh (Oak Ridge National Laboratory)
2:57 - 3:00 pm	**Closing Remarks & Photo Session**

1. About the Forum

This forum discussed the application of quantum computing and AI. We aimed to explore the strategic direction of quantum computing applications and build the researcher partnership between Korea and the U.S.

2. Introduction and Welcoming Remarks

We had a special guest In-kyu Park, the Vice Minister for Science, Technology and Innovation, for the welcoming remarks as he welcomed the forum and encouraged the practical collaboration between Korea and the U.S.

3. Presentations

The forum had 6 quantum research/government/industry presentations which consisted of 3 of Korean perspectives and 3 of the U.S. perspectives. Each presentation introduced prominent quantum application research and quantum industry trends as well as the national quantum R&D policy of Korea.

4. Panel Discussion

The panel discussion covered 3 topics including how to build a pipeline for the practical application of quantum technology between Korea and the U.S., any "***killer applications***" that integrate quantum technology and AI for Korea, and a Korean AI + Quantum cluster with the respect of both Korean and the U.S. perspectives.

5. Feedback or next plan (Optional)

This forum served as a meaningful occasion to exchange views on setting objectives, conducting research, and identifying areas for the joint application of quantum technology and AI, tailored to the specific context of Korea. However, the facilities such as the beam projector were somewhat inadequate, which was rather disappointing. I hope to see improvements in this regard next time.

6. Group Photo



TIPA Distinguished Forum on Industry-Academic International Collaboration

TIPA Forum

Thursday, August 6 1:00 - 3:00pm Colonial A

Chair



Martin Jun

Purdue University

Co-Chair



Hoon Bae Lee

TIPA US Office

Speakers



Keely DeGroot

NeoCity



Sangkee Min

University of Wisconsin



Manyeol Han

Embassy of Korea

Presenters



Sooyeon Jeong

Purdue University



Huai-Rhin Kim

Purdue University



Garam Kim

Purdue University



Sunghwan Lee

Purdue University

Time	Title and Speaker
1:00 - 1:05 pm	**Welcome Remarks** Martin Jun (Purdue University)
1:05 - 1:15 pm	**Welcome Remark and TIPA Introduction** Hoonbae Lee (TIPA)
1:15 - 1:35 pm	**Keynote Speech: Plug and Play Semiconductors: The NeoCity Model for Rapid Innovation** Keely DeGroot (NeoCity)
1:35 - 1:55 pm	**Keynote Speech: Defense Opportunity and Risk in US for Korean Companies** Sangkee Min (University of Wisconsin-Madison)
1:55 - 2:15 pm	**Keynote Speech: Intellectual Property (IP) Management in Korea-U.S. Joint Research** Manyeol Han (Embassy of the Republic of Korea in the USA)
2:15- 2:20 pm	**Q&A Session**
2:20 - 2:35 pm	**Project: Development of a Socially Assistive Robot (SAR) for Korean language and cultural learning** Sooyeon Jeong and Huai-Rhin Kim (Purdue University)
2:35 - 2:45 pm	**Project: Development of composite additive manufacturing process and AI-based intelligent twin systems** Garam Kim (Purdue University)
2:45 - 2:55 pm	**Project: Development of current collector primer for dry electrode process in rechargeable batteries** Sunghwan Lee (Purdue University)
2:55 - 4:00 pm	**Q&A Session**

1. About the Forum

- Sponsored by TIPA, this forum brings together internationally recognized scholars and researchers to highlight cutting-edge research and foster U.S.-Korea industry-academic collaboration.
- Focuses on driving technological innovation, promoting knowledge exchange, and strengthening international partnerships across critical sectors like semiconductors, defense, IP, AI, and battery technologies

2. Introduction and Welcoming Remarks

- Opening Remarks: Opening declaration and welcoming address delivered by Chair Martin Jun (Purdue University).
- Welcome & TIPA Introduction: Presentation by Co-Chair Hoonbae Lee (TIPA US Office) introducing TIPA's key global R&D initiatives and support programs for tech SMEs.
-

3. Presentations

- Semiconductor Model: Overview of NeoCity's "***Plug and Play Semiconductors***" framework designed for rapid technological innovation (Keely DeGroot).
- Defense Industry Access: Strategic analysis of market opportunities and compliance risks for Korean companies entering the U.S. defense sector (Sangkee Min).
- IP Management: Practical guidelines and legal strategies for Intellectual Property (IP) management in Korea-U.S. joint research projects (Manyeol Han).
- Socially Assistive Robotics: Research progress on developing SAR systems to facilitate Korean language and cultural learning (Sooyeon Jeong, Huai-Rhin Kim).
- Smart Manufacturing & AI: Insights into composite additive manufacturing processes integrated with AI-based intelligent twin systems (Garam Kim).
- Next-Gen Battery Technology: Development of current collector primers tailored for dry electrode processes in rechargeable battery manufacturing (Sunghwan Lee).

4. Panel Discussion

- Interactive Q&A sessions addressing key topics from the keynote addresses, including semiconductor ecosystem integration, defense market entry strategies, and joint IP rights.
- In-depth exchange regarding the commercialization potential of TIPA-funded research projects and roadmap planning for expanding R&D collaborations.

5. Group Photos



Sponsor Forums

KEIT Forum

KEIT GATC Funding Opportunities for Global R&D Collaboration

Thursday, Aug 6 3:15 am - 5:00pm Colonial A

Chairs



Yonggon Cho

Director General of KEIT



Yong Kyu Yoon

President of KSEA

Presenter



KyeongChan Moon

Senior Researcher of KEIT

This session provides an overview of the Global Advanced Technology Center (GATC) Program, including its funding opportunities, collaboration framework, and participation process for U.S. researchers and organizations. It also offers an opportunity to discuss the research interests, collaboration needs, and potential participation of U.S. researchers, fostering meaningful dialogue toward future joint R&D collaboration.

- KEIT : Korea Planning & Evaluation Institute of Industrial Technology
- KSEA : Korean-American Scientists and Engineers Association

Co-Chairs



Joseph Kim

Vice President 2 of KSEA



Sangyoon Han

Professor, Michigan Technological University



Jaekeun Kim

Director of KEIT US Boston Office



Gihwan Nam

Director of KEIT US Silicon Valley Office

Time	Title and Speaker
3:15 - 3:20	**Welcoming Remarks** Yonggon Cho (Director General, KEIT)
3:20 - 3:25	**Welcoming Remarks** Yong Kyu Yoon (President, KSEA)
3:25 - 3:35	**Introduction to the GATC Program** Kyeongchan Moon (Senior Researcher of KEIT)
3:35 - 4:25	**Brief Presentations on Korean Companies' Technology Needs for GATC Proposals**
4:25 - 5:00	**Technology Exchange and Partnership Meetings between Korean Companies and US Researcher**

1. About the Forum

This forum provides an overview of the Global Advanced Technology Center (GATC) Program, including its funding opportunities, collaboration framework, and participation process for U.S. researchers and organizations. It also offers an opportunity to discuss the research interests, collaboration needs, and potential participation of U.S. researchers, fostering meaningful dialogue toward future joint R&D collaboration.

2. Introduction and Welcoming Remarks

It is truly meaningful to introduce KEIT's corporate support initiative, the GATC program, here at UKC 2026. We would like to extend my sincere gratitude to all the professors and researchers who have shown great interest in Korea's industrial technology R&D and joined us for this forum today. We warmly invite Korean-American scientists to actively participate in the GATC program, leading the way in helping Korean enterprises advance their technologies and elevating Korea's industrial innovation onto the global stage.

3. Presentations

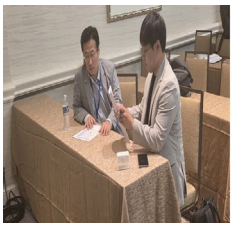
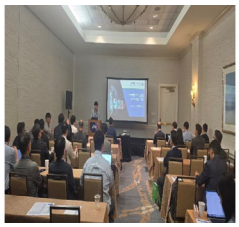
Presentation on Technological R&D Demands of Five Korean Companies Seeking International Joint Collaboration

1. Development of 800VDC-1VDC Power Conversion System and WBG-Based High-Speed Switching Power Semiconductor Technology for AI Data Servers (DONGYANG E&P)
2. Development of AI-based, world-class building materials for carbon-neutral and sustainable construction (SILKROAD C&T)
3. Development of a 50 kW-Class Wireless Power Transfer System for Electric Vehicles and a Wireless Charging Infrastructure Management System (Korea Testing Certification Institute)
4. AI BMS Semiconductor Development for Battery Safety Diagnosis in SDV Based EVs (Airpoint co., Ltd.)
5. Development of AI-Based Integrated Operation Technologies for Autonomous Firefighting Robots in Fire and Disaster Response (Korea Fire Protection UBIS Co., Ltd)

4. Networking

1:1 Technology Matchmaking Consultations Between Korean Enterprises and Korean-American Scientists

5. Group Photos



NST Forum

Forum Name: Roundtable on Strengthening Collaboration between Korea GRIs and US public research organizations

Thursday, Aug 6 3:15 am - 5:00pm Congressional B

nst National Research Council of Science & Technology

Moderator



Jinhwan Lee

NST

Speakers



Young Jong Lee

NIST



Chang-Yong Nam

BNL



Seongsin Margaret Kim

NSF

Panels



Sun Kyu Park

KICT



Yeongkook Oh

KFE



Chang-Hoon Lee

KIMS

- BNL - Brookhaven National Laboratory
- KFE - Korea Institute of Fusion Energy
- KICT- Korea Institute of Civil Engineering and Building Technology
- KIMS - Korea Institute of Materials Science
- NIST -National Institute of Standards and Technology
- NSF - U.S. National Science Foundation
- NST - National Research Council of Science and Technology

Time	Title and Speaker
3:15 - 3:20	**Introduction and Welcoming Remarks**
3:20 - 3:35	**Cooperation with NIST** Young Jong Lee (NIST)
3:35 - 3:50	**Cooperation with National Laboratories** Chang-Yong Nam (BNL)
3:50 - 4:05	**Cooperation with NSF** Seongsin Margaret Kim (NSF)
4:05 - 4:50	**Discussion**
4:50 - 5:00	**Concluding Remarks and Photo**

1. About the Forum

This roundtable will bring together Korea Government-funded Research Institute(GRI) leaders and KSEA researchers to explore strategies for strengthening Korea-US collaboration among science and technology research institutions. This discussion focuses on developing practical research cooperation models that benefit both countries amid global technological competition, as well as sharing lessons learned from their collaboration experiences. There are two talking points.

- What are the key issues that Korea GRIs encounter when pursuing collaboration with U.S. research institutions, and what strategies can be adopted to address them?
- How can Korea GRIs leverage the KSEA and/or Korean scientists and engineers in the United States to strengthen strategic research collaboration between Korea and the United States.

2. Presentations

In the first session, Dr. Young Jong Lee, Project Leader at NIST (National Institute of Standards and Technology), shared his experiences in international collaboration, with a particular focus on both bottom-up and top-down approaches to international cooperation. He noted that top-down approaches are becoming increasingly important and emphasized the need to prepare for this changing environment. He also provided an overview of NIST's ongoing collaboration activities with Korea and presented strategic approaches tailored to different areas of international cooperation. The second session featured Dr. Chang-Yong Nam from BNL (Brookhaven National Laboratory), who presented examples of cooperation with DOE National Laboratories. He provided an overview of the DOE National Laboratories and introduced various examples of international collaboration, offering insights into how to develop effective international cooperation strategies with DOE laboratories.

3. Panel Discussion

The panel discussion provided an opportunity for participating institutions to share their current research partnerships with U.S. institutions and exchange views on future collaboration. The panelists also discussed potential areas for cooperation, ways to expand networking opportunities, and approaches to building strong partnerships with U.S. institutions and researchers.

4. Group Photos



KIAT K-TAG Forum

K-TAG Steering Committee

Thursday, Aug 6 3:15 pm - 5:00pm Oakmont B

Host



Hwan Il Yoo

Chief Representative of KIAT US office

Chair



Jong Yun Park

Moffitt Cancer Center/University of South Florida



Jungkwun Kim

University of North Texas



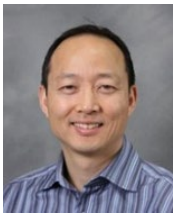
Sunkyu Park

North Carolina State University



Woo Hyoung Lee

University of Central Florida



Byung-Guk (Martin) Jun

Purdue University



Tae (Tom) Oh

Rochester Institute of Technology



Donghoon Yoon

University of Arkansas for Medical Sciences

Time	Title and Speaker
3:15 - 3:20	**Welcome Remarks** Yong Kyu Yoon (President, KSEA)
3:20 - 3:40	**Overview of K-TAG USA: History, Mission, and Current Activities**
3:40 - 4:20	**Review of Recent Programs and Accomplishments**
4:20 - 4:45	**Discussion of Strategic Priorities and Future Initiatives**
4:45 - 4:50	**Closing Remarks**

1. About the Forum

Founded in 2014, K-TAG USA (Korea-Technology Advisory Group) is a professional organization dedicated to strengthening U.S.–Korea collaboration in technology and innovation. The K-TAG Steering Committee serves as the organization's governing body, providing strategic direction and overseeing major initiatives. During the UKC, the committee reviewed ongoing activities, discuss future priorities, and identify opportunities to expand collaboration among academia, industry, and government. The meeting helped shape K-TAG's long-term vision and enhance its impact on the Korean-American science and engineering community

2. Introduction and Welcoming Remarks

Hwan Il Yoo, Chief Representative of KIAT US office

The KIAT U.S. Office highlighted the need to expand local collaboration channels that connect Korean industry with leading researchers and technology experts in the United States. It proposed strengthening a collaborative model that systematically collects companies' needs related to technical challenges, market entry, and joint R&D, while using K-TAG experts to provide rapid initial technical reviews and partner identification.

Jong Yun Park, Chair

The Chair emphasized that K-TAG's key strength lies in its Korean-American expert network spanning diverse fields and regions. He proposed moving beyond individual advisory engagements toward a system that links the identification of sector-specific collaboration opportunities with joint planning and follow-up performance management. He also stressed the need to strengthen the Steering Committee's operational responsibility for regularly reviewing annual activity plans and performance indicators.

3. Discussion

Enhancement of Member Operations and Management

The Steering Committee recognized the importance of not only identifying new K-TAG members but also ensuring their continued management and effective engagement to support the stable operation of the K-TAG expert network. In this regard, the Committee discussed the need to further improve the overall management framework by maintaining up-to-date member information and activity records and by enhancing mechanisms for utilizing members' expertise.

Enhancing the Utilization of Issue Papers

The Committee noted that K-TAG issue papers have significant potential as key knowledge-sharing content that provides Korean stakeholders with insights from experts on major U.S. technology and industry trends. Discussions focused on identifying relevant topics and industrial implications by sector and exploring ways to expand the use of these materials in various programs and international cooperation activities. Improve the structure and format of issue papers to more effectively communicate key technology and industry trends and their implications for Korean industries. Explore opportunities to utilize published materials more broadly for information sharing, program development, and the identification of potential cooperation opportunities. Share publication progress and key outcomes across sectors to promote information exchange and greater collaboration among K-TAG experts.

Promoting Member Engagement and International Cooperation

The Committee discussed the need to promote various networking and information-sharing activities to strengthen interaction among K-TAG members and enhance the practical use of the expert network. It also explored ways to connect K-TAG experts with technology and international cooperation activities undertaken by relevant organizations in Korea and the United States, thereby making greater use of their local expertise and professional networks. Expand opportunities for interaction and collaboration through networking activities that take into account regional and sector-specific characteristics. Strengthen member engagement through online and offline programs that provide opportunities to share experiences and best practices from advisory and collaborative activities.



Seoul National University (SNU) Forum

Innovate with SNU, Reinvent the Future

Friday, Aug 7 10:15 am - 12:00pm ChampionsGate

Chair



Sung Jae Kim

Vice Dean of Pubilc Affairs, College of Engineering
SNU

Presenters



Sung Jae Kim

Vice Dean of Pubilc Affairs, College of Engineering
SNU



Hong-Gyu Park

Vice Chair for Department of Physics and Astronomy
SNU



Junsuk Kang

Director for Specialized Graduate School of Intelligent Eco-Science
SNU

1. About the Forum

The 2026 Seoul National University (SNU) Sponsor Forum was held under the theme ***"Innovate with SNU, Reinvent the Future"*** to share SNU's strategic vision and research strengths while promoting global collaboration, technological innovation, and impactful research partnerships.

The forum showcased SNU's forward-looking approaches in future-shaping engineering, next-generation photonics, and AI-driven green infrastructure. Through presentations and an open discussion, the event provided participants with an opportunity to explore interdisciplinary innovation, engage in global dialogue, and identify new possibilities for collaboration among research, industry, startups, and society.

Time	Title and Speaker
10:15 - 10:30	**Welcoming Remarks** Ju Han Kim (Seoul National University)
10:30 - 10:50	**SNU Engineering toward Future-Shaping Innovators** Sung Jae Kim (Seoul National University)
10:50 - 11:10	**Advancing Photonics for Future Technologies** Hong-Gyu Park (Seoul National University)
11:10 - 11:30	**From Intelligence to Impact: AI Green Infrastructure across Research, Startups, and Society** Junsuk Kang (Seoul National University)
11:30 - 11:50	**Open Discussion**
11:50 - 12:00	**Concluding Remarks and Photo**

2. Introduction and Welcoming Remarks

The forum was held on Friday, August 7, 2026, from 10:15 a.m. to 12:00 p.m. at ChampionsGate Hall. The session was chaired by Prof. Sung Jae Kim, Vice Dean of Public Affairs, College of Engineering, Seoul National University.

The program opened with welcoming remarks, introducing the purpose of the forum and SNU's vision for innovation and global research collaboration. The opening set the context for subsequent presentations on SNU's research and education initiatives, highlighting the university's commitment to creating new value for the future through convergence and partnership.

3. Presentations

- ***10:30–10:50 a.m. | SNU Engineering toward Future-Shaping Innovators***

Speaker: Prof. Sung Jae Kim, Vice Dean of Public Affairs, College of Engineering

The presentation introduced the College of Engineering's vision for cultivating future-shaping innovators. It highlighted the role of engineering education and research in responding to emerging technological and societal challenges, and presented SNU's commitment to connecting advanced research, talent development, and global collaboration to create sustainable impact.

- ***10:50–11:10 a.m. | Advancing Photonics for Future Technologies***

Speaker: Prof. Hong-Gyu Park, Vice Chair, Department of Physics and Astronomy, College of Natural Sciences

The presentation explored the importance of photonics as a foundation for future technologies. It introduced SNU's research perspectives and capabilities in the field, demonstrating how advances in light-based science and technology can contribute to next-generation innovation, strengthen interdisciplinary research, and expand opportunities for international collaboration.

- ***11:10–11:30 a.m. | From Intelligence to Impact: AI Green Infrastructure across Research, Startups, and Society***

Speaker: Prof. Junsuk Kang, Director, Specialized Graduate School of Intelligent Eco-Science

The presentation addressed the convergence of artificial intelligence, green infrastructure, and entrepreneurship. It shared directions for research and education that connect AI-enabled solutions with sustainability challenges, and examined how collaboration among universities, startups, industry, and society can translate intelligent technologies into meaningful environmental and economic impact.

4. Panel Discussion

An open discussion followed the presentations, allowing participants to exchange perspectives on interdisciplinary research, global partnership, and pathways for translating research excellence into broader social and economic value. The discussion considered the connections among engineering, photonics, artificial intelligence, sustainability, startups, and society, reinforcing the importance of convergent approaches to future innovation.

The forum concluded with closing remarks and a group photograph. Overall, the 2026 SNU Sponsor Forum served as a meaningful platform for communicating SNU's research vision, strengthening engagement with global partners, and exploring opportunities for future collaboration and innovation.

5. Group Photos



Sookmyung Women's University Forum

Proud Sookmyung, Beyond 120; Future Research at Sookmyung Women's University

Friday, Aug 7 10:15 am - 12:00 pm Colonial B

숙명여자대학교 SOOKMYUNG WOMEN'S UNIVERSITY

Chair



Si Yeun Moon

President of Sookmyung Women's University (SMWU)

Co-Chair



Hye On Yoon

President of WISET

Presenters



Ho Sun Lim

Dean of Research Affairs, SMWU



Chang-Young Jang

Director of Research Institute of Pharmaceutical Sciences, SMWU



Young Yang

Director of Research Institute of Women's Health, SMWU



Jun Dong Park

Professor of Department of Chemical and Biological Engineering, SMWU

1. About the Forum

Celebrating its 120th anniversary in 2026, Sookmyung Women's University (SMWU) declared its "***Third Founding***" to build an adaptive, interdisciplinary research ecosystem. Co-hosted by the Research Institute of Pharmaceutical Sciences and the Research Institute of Women's Health, the forum showcased SMWU's key research achievements in pharmacy, life sciences, engineering, and women's health while promoting global network expansion.a Q&A session on recruiting outstanding researchers and fostering joint research initiatives.

2. Introduction and Welcoming Remarks

- AI & Experiential Education: President Moon highlighted that "***While AI can rapidly compress and deliver vast amounts of knowledge, it cannot compress experience***." She emphasized shifting from knowledge-oriented delivery toward cultivating hands-on experience, critical judgment, and creativity.
- Adaptive Governance: Proposed establishing "***adaptive governance***" to flexibly adjust university regulations and systems alongside fast-evolving AI technology.
- Declaration of the "***Third Founding***": Driven by interdisciplinary fusion across advanced engineering, AI, life sciences, and humanities, embracing Alvin Toffler's "***Learn, Unlearn, Relearn***" ("Outthinker") philosophy.
- Global Talent Recruitment: Stressed that the next decade is a critical window for cultivating global female STEM leaders, promising full institutional support for international joint research and faculty recruitment.

Time	Title and Speaker
10:15 - 10:30	**Welcoming Remarks** Si Yeun Moon, President, Sookmyung Women's University (SMWU), Hye On Yoon, President, Korea Foundation for Women in Science, Engineering andTechnology (WISET)
10:30 - 10:45	**Proud Sookmyung, Beyond 120 – SMWU's 120 Year-Long Endeavor** Ho Sun Lim (Sookmyung Women's University)
10:45 - 11:00	**Drug Development for Healthy Aging in Research Institute of Pharmaceutical Sciences** Chang-Young Jang (Sookmyung Women's University)
11:00 - 11:15	**History and Milestones of the Research Institute of Women's Health, SMWU** Young Yang (Sookmyung Women's University)
11:15 - 11:30	**Sookmyung's 10 Years of Fostering Female Engineering Talent and Challenges for the Next 10 Years** Jun Dong Park (Sookmyung Women's University)
11:30 - 11:45	**Q&A**
11:45 - 12:00	**Concluding Remarks/Photo Session**

3. Presentations

• Presentation 1: Proud Sookmyung, Beyond 120 – SMWU's 120 Year-Long Endeavor
Speaker: Ho Sun Lim (Dean of Research Affairs, SMWU)
Summary: Outlined SMWU's 120-year legacy, key strategic research priorities, and roadmap to becoming a global research-oriented institution.

• Presentation 2: Drug Development for Healthy Aging in Research Institute of Pharmaceutical Sciences
Speaker: Chang-Young Jang (Director, Research Institute of Pharmaceutical Sciences, SMWU)
Summary: Introduced novel drug discovery and pharmaceutical research focused on healthy aging.

• Presentation 3: History and Milestones of the Research Institute of Women's Health, SMWU
Speaker: Young Yang (Director, Research Institute of Women's Health, SMWU)
Summary: Highlighted major achievements and lifespan-wide research initiatives in women's health.

• Presentation 4: Sookmyung's 10 Years of Fostering Female Engineering Talent and Challenges for the Next 10 Years
Speaker: Jun Dong Park (Professor, Dept. of Chemical and Biological Engineering, SMWU)
Summary: Reviewed 10 years of engineering accomplishments and presented key strategies for the next decade.

4. Panel Discussion / Q&A

• Format: Interactive Q&A Session

• Focus: Discussions centered on strategies for recruiting high-caliber young scientists from North America, expanding joint research with KSEA and WISET, and providing institutional support for visiting scholars and global partnerships.

5. Feedback or Next Plan

Expand practical joint research projects and establish SMWU as a global research hub blending technology, humanities, and Hallyu.

6. Group photo



GNU Forum

Designing Researchers' Next Careers at GNU

Friday, Aug 7 10:15 am - 12:00pm Royal Melbourne

경상국립대학교
GYEONGSANG NATIONAL UNIVERSITY

Host	Chair	Presenters	
			
Eun-Suk Seo	**Seok-Jun Buu**	**Ki-Hwan Kim**	**Tae-Hoon Kim**
Professor, University of Maryland College Park	Glocal University Project Group, GNU	GADIST, GNU	Dept. of Design & Business, GNU

1. About the Forum

- The forum presented GNU's research and education environment, the Glocal University Project, and GADIST research achievements, providing concrete pathways to join GNU.

2. Introduction and Welcoming Remarks

- Under the single message "Designing your next career at GNU," this forum invited Korean-American early-career researchers in aerospace and defense, artificial intelligence, advanced materials, and all academic fields to explore their next career at Gyeongsang National University (GNU).

Time	Title and Speaker
10:15 - 10:25	**Welcoming Remarks** Eun-Suk Seo (University of Maryland)
10:25 - 10:45	**Introduction to GNU and the Glocal University Project** Seok-Jun Buu (Deputy Director, Glocal University Project Group, GNU)
10:45 - 11:05	**Research Achievements of GADIST Research Centers** Ki-Hwan Kim (Deputy Director of GADIST, School of Materials Science and Engineering, GNU)
11:05 - 11:25	**GNU's Research and Education Strategy in Computing and AI** Seok-Jun Buu (Dept. of AI and Computer Engineering, GNU)
11:25 - 11:45	**Interdisciplinary Research Bridging AI, Design, and Engineering** Tae-Hoon Kim (Dept. of Design and Business, GNU)
11:45 - 12:00	**Closing Remarks** (Chair)

• GNU : Gyeongsang National University

• GADIST : Gyeongnam Aerospace & Defense Institute of Science and Technology

3. Presentations

- Presentations were delivered on GNU's Glocal University Project, GADIST research achievements, computing and AI strategies, and interdisciplinary research bridging AI, design, and engineering.

4. Panel Discussion

- Questions and discussions were conducted during the presentation sessions.
- 5.Feedback or Next Plan
- GNU will continue networking with Korean-American researchers and explore opportunities for future research collaboration, academic exchange, and recruitment.

5. Group photos









RDA Forum

Renewable Energy and Environmental Sustainability in Agriculture

Friday, Aug 7 10:15 am - 12:00pm Augusta B

농촌진흥청 Rural Development Administration

Chair



Sung Woo Kim

North Carolina State University
Raleigh, NC

Co-Chair



Kuk-Hwan Seol

Rural Development Administration

Presenter

- **Jin Kyung Kwon** Research Scientist, National Institute of Agricultural Sciences, RDA
- **Sung Woo Kim** WNR Distinguished Professor, North Carolina State University
- **Chung Geon Lee** Research Scientist, National Institute of Agricultural Sciences, RDA
- **Adegbola Adesogan** Associate Vice President and Director of Department of Animal Sciences, University of Florida

Time	Title and Speaker
10:15 - 10:20	**Welcoming Remarks** Sung Woo Kim (North Carolina State University)
10:20 - 10:30	**Introduction of NAS, RDA** Je Hoon Sung (Director General, National Institute of Agricultural Sciences, Rural Development Administration)
10:30 - 10:45	**Current Status of Energy Efficiency Technology Development in Agriculture** Jin Kyung Kwon (Research Scientist, National Institute of Agricultural Sciences, RDA)
10:45 - 11:00	**N circulation for sustainable animal agriculture through crop and feed management strategies** Sung Woo Kim (North Carolina State University)
11:00 - 11:15	**Research Trends in the Utilization of New and Renewable Energy in Agriculture** Chung Geon Lee (National Institute of Agricultural Sciences, RDA)
11:15 - 11:30	**Leveraging Integrated AI, agriculture, and global partnerships for resilient food systems: A UF/IFAS GFSI collaboration framework** Adegbola Adesogan (University of Florida)
11:30 - 11:55	**Discussion**
11:55 - 12:00	**Closing** Kuk-Hwan Seol (Rural Development Administration)

1. About the Forum

- This forum brought together researchers from South Korea and the United States to address challenges from the instability of energy prices. Participants shared recent trends in agricultural renewable energy and collaborated on practical energy-saving technologies.

2. Introduction and Welcoming Remarks

Korean and U.S. researchers shared and discussed advances in technologies for reducing energy consumption and enhancing agricultural productivity, while exploring opportunities for technology collaboration to advance sustainable agriculture.

3. Presentations

The Rural Development Administration (RDA) presented research trends in renewable energy applications and energy efficiency technologies in agriculture and proposed collaboration in four key areas: (a) energy–crop growth digital twins, AI, and energy management systems (EMS); (b) agrivoltaics integrated with precision and autonomous agriculture; (c) autonomous energy-independent smart farms and microgrids; and (d) agricultural energy and carbon life cycle assessment (LCA) and carbon credits.

4. Panel Discussion

Participants expressed interest in research trends in areas beyond agricultural energy, including nutrition and livestock, and discussed potential approaches for fostering research collaboration.

5. Feedback or next plan (Optional)

Joint U.S.-Korea Symposium of Scientists in Agriculture (First Half of 2027)

6. Group photo



KHIDI Forum

Korea-U.S Advanced Bio & Health, and Physician-Scientist Collaboration

Friday, Aug 7 10:15 am - 12:00pm Congressional B

KHIDI 한국보건산업진흥원 Korea Health Industry Development Institute

Chair



Min Suk Kang

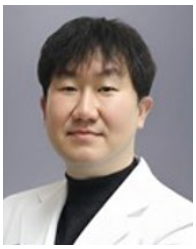
Columbia University Medical Center

Presenter



Hyunchul Kim

KHIDI USA



Jae Sang Oh

The Catholic University



Hwo yeon Seo

KAIST Graduate School of Future Strategy



Albert Kim

University of South Florida



Donghoon Yoon

University of Arkansas for Medical Sciences



Jeung Yoong Bae

KIC Silicon Valley

Time		Title and Speaker
10:15 - 10:20		**Opening** Min Suk Kang (Columbia University Medical Center)
10:20 - 10:25		**Welcoming Remarks** Hyunchul Kim (KHIDI, USA)
Session 1. Korea-US Researcher Training	10:25 - 10:35	**Introduction of the Korea Physician Scientists Training Project** Hyunchul Kim (KHIDI USA)
	10:35 - 10:50	**Translational Research from Clinic to Bench as a Surgeon-Scientist** Jae Sang Oh (The Catholic University)
	10:50 - 11:05	**Connecting Dots** Hwo yeon Seo (KAIST Graduate School of Future Strategy)
Session 2. Advanced Bio & Health Strategic Hub	11:05 - 11:15	**Introduction of Advanced Bio & Health Strategic Hub** Hyunchul Kim (KHIDI USA)
	11:15 - 11:45	**Panel Discussion - Fostering Korea-U.S. Bio & Health Innovation: The Role of the Advanced Bio & Health Strategic Hub** Albert Kim (University of South Florida), Donghoon Yoon (University of Arkansas for Medical Sciences), Jeung Yoong Bae (KIC Silicon Valley)
11:45 - 11:55		**Q &A**
11:55 - 12:00		**Closing & Photo Session**

1. About the Forum

- This forum convened leading medical professionals, policy makers, and biotechnologists to discuss the next frontier of bilateral research cooperation between South Korea and the United States. The event highlighted institutional frameworks for nurturing physician-scientists, showcased breakthrough researcher presentations, and introduced the newly launched Advanced Bio & Health Strategic Hub in Boston, Massachusetts.

2. Presentations & Panel Discussion

1. Session 1: Korea-US Researcher Training
   - i. 10:25-10:35 Introduction of the Korea Physician Scientists Training Project (Hyunchul Kim, KHIDI USA)
   - ii. 10:35-10:50 Translational Research from Clinic to Bench as a Surgeon-Scientist (Jae Sang Oh, the Catholic University) : Shared experience in building a stroke research pipeline through early-career and innovation programs and strengthening team capacity through overseas training; emphasized the need for a sustainable research environment for physician-scientists and a clear separation of clinical and research duties.
   - iii. 10:30-11:05 Connecting Dots (Hwo yeon Seo, KAIST Graduate School of Future Strategy) : Shared experience transitioning from clinical practice to community health and AI research, analyzing individual behavioral network dynamics related to suicidal ideation using smart devices
2. Session 2: Advanced Bio & Health Strategic Hub
   - i. 11:05-11:15 Introduction of Advanced Bio & Health Strategic Hub : Introduced the Boston Advanced Bio Strategy Hub and its role as a bridge across the U.S. network, supporting the full cycle from regulatory affairs to technology transfer.
   - ii. 11:15-11:45 (Panel Discussion) Fostering Korea-U.S. Bio & Health Innovation: The Role of the Advanced Bio & Health Strategic Hub
     Albert Kim (University of South Florida), Donghoon Yoon (University of Arkansas for Medical Sciences), Jeung Yoong Bae (KIC Silicon Valley), Hyunchul Kim (KHIDI USA) : Discussed ① the benefits and challenges of Korea-U.S. global collaboration and ② the differences between MD-PhD systems in Korea & the U.S. and related policy recommendations.

3. Group photos



KIAT, KEIT, KETEP Forum

Introduction to Korea-US Industrial Technology Cooperation Program Session

Friday, Aug 7 10:15 am - 12:00pm Colonial A

Host



Hwan Il Yoo

Chief Representative of KIAT US office

Chair



Jungkwun Kim

University of North Texas

Presenters



Sunglook Sue

KETEP US



Woo Hyoung Lee

University of Central Florida



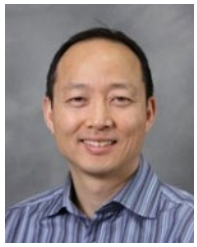
Woon-Hong Yeo

Georgia Institute of Technology



Deok-Ho Kim

Johns Hopkins University



Byung-Guk(Martin) Jun

Purdue University



Jae Keun Kim

Director of KEIT US Boston Office



Gihwan Nam

Director of KEIT US Silicon Valley Office



JinWhee Chung

Program Director (PD) of KEIT

Time		Title and Speaker
10:15 - 10:20		**Welcome Remarks** Yong Kyu Yoon (President, KSEA)
KIAT/KETEP	10:20 - 10:40	**Introduction of Korea-US Industrial Technology Cooperation Program (KIAT)** **Korea-North America Joint R&D on Energy (Korea Institute of Energy Technology Evaluation and Planning, KETEP)**
	10:40 - 11:20	**Case Studies** • **GITCC : Purdue, Johns Hopkins, Georgia Tech** • **K-TAG: AI-Based FlocFinder Technology Enhancement and International R&D Planning** Woo Hyoung Lee (University of Central Florida)
KEIT	11:20 - 11:30	**KEIT Global Open Innovation: Strategies and Funding Opportunities** Jaekeun Kim (KEIT)
	11:30 - 11:50	**Strengthening the Global Competitiveness of Korea's Defense Industry through R&D Support** JinWhee Chung (KEIT Defense Industry Program Director)
11:50 - 12:00		**Discussion, Q&A Session**

1. About the Forum

The KIAT, KEIT, KETEP Forum was held to introduce industrial cooperation programs supported by Korea's Ministry of Trade, Industry and Resources. The session highlighted major program objectives, areas of support, and opportunities for international collaboration between Korea and the United States. The forum provided practical information to universities, research institutions, companies, and researchers interested in Korea–U.S. bilateral industrial technology cooperation. Participants also had the opportunity to discuss program details directly with representatives and presenters from KIAT, KEIT, and KETEP.

2. Introduction and Welcoming Remarks

The forum began with welcoming remarks by Yong Kyu Yoon, President of KSEA. He welcomed the participants and emphasized the importance of strengthening industrial technology cooperation and R&D collaboration between Korea and the United States. The opening session was followed by introductions to Korea–U.S. industrial technology cooperation programs, including major initiatives supported by KIAT and KETEP.

3. Presentations

The presentations introduced major Korea–U.S. industrial technology cooperation programs, funding opportunities, and collaborative R&D activities. KIAT introduced the Korea-US Industrial Technology Cooperation Program, while KETEP presented the Korea-North America Joint R&D on Energy program.

As part of the GITCC case studies, Woon-Hong Yeo of the Georgia Institute of Technology, Deok-Ho Kim of Johns Hopkins University, and Byung-Guk (Martin) Jun of Purdue University introduced the purpose and role of the GITCC Center. They also provided an overview of the Center's ongoing activities and shared information on its efforts to promote Korea–U.S. industrial technology and R&D cooperation.

In addition, Woo Hyoung Lee of the University of Central Florida presented the K-TAG case study on AI-Based FlocFinder Technology Enhancement and International R&D Planning. Jae Keun Kim of KEIT presented KEIT Global Open Innovation: Strategies and Funding Opportunities, providing information on KEIT's global cooperation strategies and funding opportunities. JinWhee Chung of KEIT presented Strengthening the Global Competitiveness of Korea's Defense Industry through R&D Support, introducing R&D support programs aimed at enhancing the global competitiveness of Korea's defense industry.



CKU & KNU Forum

Empowering Regional Innovation through AI, Sustainability, and Industry-Academia Collaboration

Friday, Aug 7 10:15 am - 12:00pm Congressional A

Chair



Kyu Han Kim

Director, ANCHOR Initiative
Catholic Kwandong University (CKU)

Co-Chair



Dae Hee Lee

Director, ANCHOR Initiative
Kangwon National University (KNU)



Joo Hyong Noh

Professor,
Kanto Gakuin University
(KGU)



Bum Shick Shin

Professor
Catholic Kwandong University
(CKU)

Presenters



Jae Hyun Jo

Assistant Professor
Catholic Kwandong University
(CKU)



Kyu Tae Shim

Senior Researcher
Waterfront and Coastal Research Center(CKU)



EunSu Lee

Professor
New Jersey City University
(NJCU)

1. About the Forum

- The ANCHOR Initiative is one of the Republic of Korea's premier regional innovation programs, jointly supported by the Ministry of Education and local governments to cultivate top-tier regional talent, reinforce university-industry collaboration, and foster sustainable regional growth.
- This forum marked the first collaborative milestone between Catholic Kwandong University (CKU) and Kangwon National University (KNU) under the ANCHOR Initiative.
- Centered on core strategic pillars—Biohealth, Food Technology, Climate Change, Marine Energy, Future Energy, and Future Mobility—the session demonstrated actionable models for regional problem-solving alongside global talent development.
- Furthermore, both universities presented a forward-looking vision to establish an AI-powered advanced education ecosystem that converges research, technological innovation, entrepreneurship, and digital learning to position Gangwon Province as a sustainable hub for global collaboration.

2. Introduction and Welcoming Remarks

- Directors Kyu Han Kim and Dae-Hee Lee delivered the opening remarks, outlining the vision, objectives, and foundational significance of the CKU–KNU joint alliance under the ANCHOR Initiative.

3. Presentations

- The forum featured seven thematic presentations spanning marine energy, food technology, climate policy, electronic materials, digital healthcare AI, and global maritime logistics.

4. Presentations

- Discussed actionable paths to connect the ANCHOR Initiative with U.S. and global research institutions, focusing on joint research programs, faculty-researcher networks, and cross-border student internship opportunities.

Time	Title and Speaker
10:15 - 10:20	**Opening Remarks** Kyuhan Kim (Catholic Kwandong University) & Daehee Lee (Kangwon National University)
10:20 - 10:30	**A Vision for Achieving RE100 through Coastal Data Center Development and Marine Energy Utilization** Kyu Han Kim (Executive Director, ANCHOR Project, Catholic Kwandong University)
10:30 - 10:40	**The Role of the ANCHOR Project in Supporting Sustainable Partnerships Between Regional Universities and Their Communities** Dae-Hee Lee (Executive Director, ANCHOR Project, Kangwon National University
10:40 - 10:50	**Development of an Ultrafine Soybean Powder Processing Method for Functional Nutritional Foods** Kyutae Shim (Senior Researcher, Waterfront and Coastal Research Center)
10:50 - 11:00	**Gangneung City's Carbon Neutrality Plan and Vision for Climate Change Response** Bum-Shick Shin (Professor, Department of Smart Port Engineering, Trinity College, Catholic Kwandong University)
11:00 - 11:10	**Applicability of Both-Sided Flash Lamp Annealing (FLA) Method on Heat Treatment Cu Plating Thin Film and Low Dielectric Resin Films** Joo Hyong Noh (Professor, Kanto Gakuin University, Surface and Material Research Institute)
11:10 - 11:20	**AI Reading Behavior and Responses Simultaneously: A Study on an MMSE-Based Multimodal Mental Health Prediction Model** Jae Hyun Jo (Assistant Professor, Department of Digital Health Engineering, Trinity College, Catholic Kwandong University)
11:20 - 11:30	**A Vision for Port and Logistics Infrastructure on Korea's East Coast for the Arctic Shipping Route** EunSu Lee (Professor and Director of Supply Chain, Maritime Logistics, Analytics, Operations, and Service Management at New Jersey City University)
11:30 - 11:45	**Future Collaboration Discussion and Q&A**
11:55 - 12:00	**Closing Remarks / Group Photo**

5. Group photo



Future Tech Forum

Global K-Tech Forum Where K-Content Meets the Future of Technology

Friday, Aug 7 1:00 - 2:30 pm Olympic

Chair



Jung Han

CEO of
K-EnterTech Hub

Presenter



Sam-Seok Ko

Professor
of Dongguk
University

1. About the Forum

The Future Tech Forum was an official session of UKC 2026, the 39th U.S.–Korea Conference on Science, Technology and Entrepreneurship, held August 5–8 in Orlando under the theme "From Imagination to Innovation — Into Reality" and organized by KSEA in its 55th anniversary year. K-EnterTech Hub hosted the session on Friday, August 7, from 1:00 to 3:00 PM in the Olympic A room. Approximately 30 participants attended, drawn from UKC registrants and from the Korean company delegations attending the conference.

The session was organized around one question: what a Korean content or technology company actually has to have in place before it can operate in the United States. Korean content already travels; the technology that produces and delivers it now travels with it.

The forum used the framework of co-evolution — content and technology growing as conditions for each other rather than as vendor and client — and asked five companies to describe where they stand in the U.S. market and what they had to change to get there.

The program was built in two halves. Part 1 covered deep tech, with Acryl on AI infrastructure and Ludens Partners on physical AI in food and beverage operations. Part 2 covered entertainment technology, with HelloWorks on K-POP live performance and program supply, Studio Meta-K on generative AI production and virtual IP, and Sinclair / CAST.ERA on U.S. broadcast and FAST distribution. A 40-minute panel closed the session, adding legal, regional and broadcast perspectives from three U.S.-based experts.

Sponsorship followed the same logic as the program. SBS, a Korean terrestrial broadcaster and content producer; Acryl, an AI infrastructure company; and Studio Meta-K, a generative AI production studio, joined as main sponsors — a content company and two technology companies on the same stage.

Time	Title and Speaker
1:00 - 1:02	**Welcoming Remarks** Jung Han (CEO, K-EnterTech Hub)
1:02 - 1:05	**Welcome Remarks** Yong Kyu Yoon (President, KSEA)
1:05 - 1:08	**Congratulatory Message from SBS (written, read by the Chair)**
1:08 - 1:28	**Co-evolution: AI and the Future of K-Content** Sam-Seok Ko (Distinguished Professor)
1:28 - 1:44	**Part 1 Deep Tech / Anchor — The Loss Between Peak and Realized Performance: GPUBASE Recovers It** Sang-ik Roh (Executive Vice President, Acryl)
1:44 - 1:53	**Part 1 Deep Tech — Food Tech: F&B Robotics and Physical AI** Rae-hyun Sung (CEO, Ludens Partners)
1:53 - 1:56	**Entertainment Technology Trends** Jung Han (CEO, K-EnterTech Hub)
1:56 - 2:03	**Part 2 EnterTech — Expanding Overseas Live Markets through K-POP Performance and Content Supply** Sam Woo (Director, HelloWorks U.S.)
2:03 - 2:10	**Part 2 EnterTech — Generative AI Video and Virtual IP in Global Media Markets** Kwang-jip Kim (CEO, Studio Meta-K)
2:10 - 2:18	**Part 2 EnterTech — K-Content Distribution via U.S. Broadcast and FAST, and K-Channel 82** Stanley Park (Vice President, CAST.ERA / Sinclair)
2:18 - 2:58	**Panel Discussion — Korean Companies Going Global: K-Content and K-Tech** Six panelists; moderated and closed by Jung Han
2:58 - 3:00	**Q&A and Closing**

2. Introduction and Welcoming Remarks

Jung Han, CEO of K-EnterTech Hub and Chair of the session, opened the forum by setting out its purpose and the order of the program, and handed over to KSEA for welcome remarks. Yong Kyu Yoon, President of KSEA, welcomed participants on behalf of the conference organizer, placing the session within UKC 2026 and the association's role in connecting Korean and Korean-American scientists, engineers and entrepreneurs.

Congratulatory Message from SBS- SBS, a main sponsor of the session, sent a written congratulatory message under the name of President and CEO Moon-shin Bang, which the Chair read in full. The message set out the gap Korean terrestrial broadcasters now operate in.

– Three SBS dramas released in the first half of 2026 — Kim Bu-jang, Brave New World and Divine Law Firm — all entered the Netflix series Top 20.

– Drama production costs run at roughly 1.5 billion won per episode, while television advertising yields 400–500 million won even when the regulatory ceiling is sold out in full, which makes sustained investment difficult.

– Regulation of advertising, sponsorship, program review and scheduling remains calibrated to an analog era in which broadcasters were the dominant players, while global platforms operating in the same market face no equivalent rules — hence the principle of "same service, same regulation."

– SBS has redefined itself as a global media content company under the slogan "***Beyond TV, beyond terrestrial, beyond Korea,***" and set its 2026 management principle as becoming a "***content leader with AI First,***" introducing AI across planning, production and distribution.

– With Korean production costs now close to three times those in Japan, the message called for active production investment by global media and technology companies, and for easing the ban on foreign equity investment in Korean terrestrial broadcasters.

The message closed by proposing that the planning and production capability of Korean broadcasters be combined with the AI technology, capital and distribution networks of global companies.

3. Keynote — Co-evolution, AI and the Future of K-Content

Samseog Ko, Distinguished Chair Professor, Dongguk University · 20 minutes

Professor Ko presented co-evolution as a way of reading the current market rather than as a slogan. Content demand pulls in technology investment, and that technology in turn changes how content is made and how it reaches audiences; neither industry can now set its strategy without the other's roadmap. He argued that the next stage for Korean content is not a larger export figure but the building of an ecosystem, and set out five points.

– K-culture needs to expand beyond cultural consumption into what he termed a lifestyle public good.

– K-brands need to develop into a fair and sustainable consumption model.

– K-tech, AI included, should serve as an instrument of digital inclusion and cultural democratization.

– A co-evolution strategy points beyond a competition-centered national model toward an order built on cooperation and solidarity.

– Co-evolution also connects to the future of cities and regions, not only to national industry policy.

He closed the keynote by framing the presentations that followed: for a Korean company entering the U.S., the practical question is not whether to adopt AI but which part of the production and distribution chain it intends to hold, and what regulatory, standards and workforce conditions have to be met to hold it.

4. Presentations

• Acryl — The Loss Between Peak and Realized Performance: GPUBASE Recovers It

Sang-ik Roh, Executive Vice President, Acryl · Part 1, anchor presentation, 16 minutes

Acryl holds both the layer that operates GPU infrastructure and the AI services that run on top of it. The presentation dealt with the infrastructure layer: organizations buy GPU capacity at peak specification but realize far less of it in operation, and that loss is an operations problem rather than a hardware problem. GPUBASE manages GPU, server, storage and network resources in a single environment, covering resource allocation, job scheduling, communication optimization, integrated monitoring, and fault detection and recovery.

– Verification: K-Scale Evaluation was run across global cloud environments on 1,272 GPUs with seven types of heterogeneous accelerators, reporting GPU utilization above 90% and processing speed improvements of up to 24 times under high-load training conditions.
– Commercial reference: GPUBASE has been supplied to a modular data center build in Korea — a basic-tier contract followed by a full-stack advanced-tier contract — and the platform is being extended toward large-scale AI data centers.
– U.S. direction: universities, research institutes and data centers as the first target segment. During the UKC week the company visited the University of Florida research computing facility, where the distinction between hardware occupancy and effective computational efficiency was discussed directly with the operating team.
The company's integrated AI platform Jonathan and healthcare AI platform NADIA were covered as the application layer above the same infrastructure.

- Ludens Partners — Food Tech: F&B Robotics and Physical AI

Rae-hyun Sung, CEO, Ludens Partners · Part 1, 9 minutes

Ludens Partners is a food tech company. Founded in 2019 and based in Seongsu-dong, Seoul, it started from a single question — how robotic automation, until then treated as something for factories and production lines, could be brought into the F&B market — and now builds service robots for commercial kitchens together with the AI control software that runs them. Its robots are sold under the ATO series, with ATO-F for kitchen and cooking operations. The company does not simply install robots. Its method is to read the whole environment the robot will work in — kitchen layout, recipe, workflow, the way staff move — fix what does not work, and then place the robot so that both the taste of the food and the efficiency of the operation improve. That approach is what makes physical AI enter a market differently from software: once a robot takes over part of the cooking process, staffing structure, insurance and health regulations follow immediately.

For the U.S. market this means a system validated in Korea has to be re-specified rather than exported as-is. The presentation set out how the product was adjusted to local staffing patterns, insurance requirements and sanitation rules, and what that localization costs.

Entertainment Technology Trends

- Jung Han, CEO, K-EnterTech Hub · Part 2 opening, 3 minutes

A short data briefing opened the second half. Nielsen's The Gauge for May 2026 put streaming at 48.6% of U.S. television use against 20.4% for cable and 19.2% for broadcast, with YouTube alone at 13.8% — about seven-tenths of all U.S. broadcast viewing — followed by Netflix at 8.0%. Luminate's U.S. Entertainment 365 survey found 52% of Americans aged 13 and over using generative AI regularly or occasionally, rising to roughly seven in ten among teenagers and falling to three in ten among those 65 and over. On the Korean side, KOCCA reported content industry exports of 22.2 trillion won in 2025, up 5.9% year on year, with generative AI adoption among content companies at 32.1% and broadcast content exports growing at a 12.04% annual average over the decade to 2023.

- HelloWorks — Expanding Overseas Live Markets through K-POP Performance and Content Supply

Sam Woo, Director, HelloWorks U.S. · Part 2, 7 minutes - HelloWorks runs two connected businesses in the United States: staging K-POP artist performances, and supplying programming — variety, drama and K-POP content — for carriage on U.S. channels. The company operates through its U.S. office and contracts directly with local promoters and venues, and the presentation covered how those contracts and settlement structures actually work, how a touring schedule is built alongside channel programming, and the route by which Korean programming reaches U.S. channels.

- Studio Meta-K — Generative AI Video and Virtual IP in Global Media Markets

Kwang-jip Kim, CEO, Studio Meta-K · Part 2, 7 minutes - Studio Meta-K replaces parts of the shooting and post-production process with generative AI — AI storyboards, LED wall backgrounds and visual elements produced on set instead of in post — to reduce unit cost and schedule. The presentation showed the resulting pipeline and output, and then moved to the point that decides overseas contracts: how training data, performer rights and credits are handled. The company, founded in 2022 and led by a former Hollywood VFX producer, has carried out more than 100 commercial projects and raised a 3 billion won

Series A.
Sinclair / CAST.ERA — K-Content Distribution via U.S. Broadcast and FAST, and K-Channel 82
Stanley Park, Vice President, CAST.ERA · Part 2, 8 minutes
Where the preceding presentations dealt with content and production technology, this one dealt with the route to the U.S. viewer. Sinclair is a U.S. broadcast station group; CAST.ERA, its joint venture, operates ATSC 3.0 transmission infrastructure and FAST channel operations. K-Channel 82 is the Korean content channel built on top of that infrastructure. The presentation set out how Korean content is carried on U.S. broadcast and FAST, and what a supplier has to have ready — advertising sales, localization and program review among them — before that carriage is possible.

5. Panel Discussion
Korean Companies Going Global — K-Content and K-Tech · 40 minutes · moderated by the Chair
Six panelists took part: four from the presenting companies (Sang-ik Roh, Rae-hyun Sung, Sam Woo, Kwang-jip Kim) and two U.S.-based experts (Stanley Park, Young-mu Heo). The discussion was structured to produce first-hand experience rather than position statements, and ran in three stages: one-minute self-introductions covering each panelist's role and one thing their company is doing in the U.S. right now; one question per panelist with two minutes to answer; and three common questions put to the floor without naming anyone, with participants raising a hand to speak.

Individual questions

Sang-ik Roh (Acryl)	What did U.S. customers ask about most when you first met them?
Rae-hyun Sung (Ludens Partners)	What differed most from Korea when you installed robots in an American store?
Sam Woo (HelloWorks)	What differed most from Korea once you had actually staged a show in the U.S.?
Kwang-jip Kim (Studio Meta-K)	What do U.S. counterparts ask about most when the video was made with generative AI?
Stanley Park (CAST.ERA)	What has to be prepared first for Korean content to be carried on U.S. broadcast or FAST?
Young-mu Heo (YM&Company)	Where should a company start when establishing its first U.S. base?

Common questions

– What differed most between working in the United States and working in Korea?
– What do content companies and technology companies each need from the other in order to work together?
– If you could give one piece of advice to a company preparing to enter the U.S. market, what would it be?

Topics that ran through the discussion included entry into the U.S. broadcast market and FAST platforms; copyright and IP in AI-generated content; commercializing virtual and character IP; establishing a first U.S. base and finding local partners; joint research and validation with universities and hospitals; and what has to be done in the first twelve months after entry.
The Chair closed the discussion himself, bringing it back to the co-evolution framework set out in the keynote and naming what still sits between what Korean companies have prepared and what U.S. counterparts ask for, then took questions from the floor before closing the session.

6. Feedback and Next Plan
Approximately 30 participants attended, a mix of Korean-American researchers and engineers registered at UKC and members of Korean company delegations. The audience was smaller than the 100 invited, which is consistent with a Friday afternoon slot running against other sessions, but the composition was the one the forum was designed for and the room allowed direct exchange between presenters and participants throughout. The following items are carried forward.

– Acryl used the conference to open its U.S. market entry, targeting universities, research institutes and data centers. Its visit to the University of Florida research computing facility during the UKC week has continued into follow-up discussion of a joint technical evaluation.
– Presenting companies asked for a business-matching component alongside the session. For the next edition the host will consider a pre-arranged meeting schedule or a matching block with local partners.
– Two hours proved tight for six presentations and a 40-minute panel. Either a longer slot or fewer presentations

with more time each would be preferable at UKC 2027.

– Scheduling and room assignment affected turnout more than program content did. An earlier slot, or placement adjacent to a plenary or a signature symposium, would help; the host would welcome an early discussion with the KSEA organizing committee on this point.

– K-EnterTech Hub intends to continue the forum at UKC 2027 and to keep the same structure of Korean companies presenting alongside U.S.-based experts.

7. Group photo



Session signage at the entrance to Olympic A — the banner carried the seven sponsor logos: Acryl, SBS, YM&Company, HelloWorks, Studio Meta-K, Ludens Partners and Sinclair



Keynote — Distinguished Professor Samseog Ko on co-evolution, AI and the future of K-content.



This forum is sponsored by :

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KSEA Forums

KWiSE-WISET Women in STEM Forum

Thursday, Aug 6 3:15 - 5:00pm Colonial B / Friday, Aug 7 1:00 - 3:00pm Augusta B

Chair



Sungsil Moon

President of KWiSE

Chair



Hye On Yoon

President of WISET

Co-Chair



Sun Mee Kang

President of KOFWST

Co-Chair



Eun Sook Hwang

Vice president of KWSE

1. About the Forum

- **Forum 1 (Empowering Women in the Age of AI):** Aimed to explore how women scientists and engineers can navigate the rapidly evolving AI era while building sustainable careers and leadership. Through intergenerational dialogue, Forum 1 examined the opportunities and limitations of AI, the continuing importance of human judgment and creativity, and the role of mentoring, professional networks, and inclusive leadership in supporting women in STEM.
- **Forum 2 (The Future of Healthcare Across the Human Experience):** Aimed to explore cutting-edge advances in precision medicine, environmental health, and data science across the lifespan. By presenting diverse multidisciplinary healthcare research—from early life factors to aging and chronic disease prevention—Forum 2 highlighted how women-led research drives innovation and improves global health outcomes.
- **Joint Objectives:** Across both sessions, the forums sought to honor outstanding female leadership, recognize promising young researchers through award programs (Young Scientist Award, Outstanding Women Scientist/ Leadership Award), foster intergenerational exchange, and strengthen long-term U.S.–Korea scientific networks.

2. Introduction and Welcoming Remarks

Korean-American Women in Science and Engineering (KWiSE) is a nationwide professional organization dedicated to advancing the excellence, leadership, visibility, mentoring, and professional networks of Korean-American women in science, technology, engineering, and mathematics (STEM) across the United States.

In 2026, KWiSE organized two signature forums at UKC 2026 to address transformative shifts in technology, research paradigms, and human health:

- Forum 1 (KWiSE-KOFWST Forum): "Empowering Women in the Age of AI: Breaking Barriers Across Generations"
- Forum 2 (KWiSE-KWSE Forum): "The Future of Healthcare Across the Human Experience"

Artificial intelligence and generative AI are rapidly changing scientific research, education, innovation, and career development, while modern healthcare is shifting toward precision medicine, big data integration, and lifelong wellness. At the same time, women scientists continue to navigate challenges related to leadership opportunities, representation, career transitions, work-life integration, and interdisciplinary collaboration.

The 2026 Women in STEM Forum brings together women scientists and engineers from different career stages and disciplines to discuss these technological transformations, exchange practical research experiences, strengthen intergenerational connections, and identify strategic pathways for future scientific leadership and U.S.–Korea collaboration.

3. Session overview

Forum 1 Overview: Empowering Women in the Age of AI: Breaking Barriers Across Generations

Organized in collaboration with KOFWST and WISET, Forum 1 brought together panelists representing senior leaders, mid-career researchers, and graduate students. Over 70 participants attended, exceeding the initial participation target by at least 120%. The session featured opening/welcoming remarks from organizational leadership (Dr. Sung-Sil Moon, Dr. Hye On Yoon, Dr. Sun Mee Kang, Dr. Si Yeun Moon), the KWiSE-WISET Young Scientist Award Ceremony, and a moderated panel discussion (Moderator: Dr. Hyunsook Park).

Forum 2 Overview: The Future of Healthcare Across the Human Experience

Organized in collaboration with KWSE, Forum 2 focused on precision medicine, big data, and lifelong health solutions. Moderated by Dr. Youbin Kim, the forum opened with remarks from KWiSE and KWSE leadership (Dr. Sung-Sil Moon, Dr. Eun Sook Hwang), followed by the KWiSE Outstanding Women Scientist/Leadership Award Ceremony. The session featured four specialized technical presentations spanning data science in women's health, steroidogenesis, environmental risks in pregnancy, and precision sleep health.

4. Key discussion & Research Topics

Forum 1 Key Topics (AI & Intergenerational Leadership)

- AI as a Research-Support Tool: Recognition of AI as a powerful efficiency booster in literature reviews, data handling, and scientific drafting, with an emphasis that critical judgment, ethics, and final interpretation must remain human-centered.
- Technology Adoption & 'AI Divide': Analysis of structural AI gaps—including Adoption, Exposure, and Authority gaps—and how age and gender intersect in technology adoption. Emphasized practical experimentation over delayed adoption.
- Persistent Barriers for Women in STEM: Addressing long-standing structural inequities, underrepresentation in tech leadership/building roles, and the necessity of targeted institutional support.
- Human-Centered Strengths in Leadership: Highlighting question formulation, scientific intuition, communication, ethical responsibility, and empathetic leadership as non-replacable human assets in an AI-driven environment.
- Reciprocal & Intergenerational Mentoring: Fostering two-way mentorship where senior scientists contribute career perspective and leadership wisdom while junior researchers share new technical capabilities and digital workflows.
- Career Resilience & Flexible Pathways: Encouraging non-linear career strategies, building cross-disciplinary networks, and maintaining openness to emerging scientific paradigms.

Forum 2 Key Topics (Healthcare Innovations Across the Lifespan)

- Lifespan Data Science in Women's Health: Dr. Mikyong Shin (KWiSE Southeastern Chapter) presented "***From Cradle to Grave: Data Science for Women's Health Across the Life Course***," illustrating how longitudinal data models optimize healthcare strategies at distinct life stages.
- Stress Mechanisms & Molecular Biology: Dr. Eun Sook Hwang (Ewha Womans University) delivered insights on "***Modulation of Stress-Induced Steroidogenesis***," highlighting cellular and endocrine responses to environmental and physiological stressors.
- Maternal & Fetal Environmental Health: Dr. Bo Young Park (California State University Fullerton) discussed "***Environmental Risk Factors in Pregnancy: Implications for Maternal and Fetal Health***," underscoring preventative measures against external environmental hazards during critical developmental windows.
- Precision Medicine for Chronic Disease: Dr. Ji-Eun Park (Korea Institute of Oriental Medicine) shared research on "***Precision Sleep Health for Chronic Disease Prevention***," emphasizing personalized sleep monitoring and interventions to prevent chronic systemic diseases.

5. Impacts and Outcomes

- Comprehensive Intergenerational & Interdisciplinary Dialogue: The combination of Forum 1 and Forum 2 created a holistic space connecting broad career strategy with high-impact technical research. Forum 1 facilitated candid intergenerational dialogues on career navigation, while Forum 2 showcased technical excellence across biological and health data sciences.

- Recognition of Scientific Excellence & Next-Gen Talent: The joint forums successfully recognized outstanding achievements through the KWiSE Outstanding Women Scientist and Leadership Award and fostered future pipelines through the KWiSE-WISET Young Scientist Award (awarded to Dr. Su Hyun Lee and Ms. Namhee Lee).
- In-Depth Exploration of Technology, Ethics, and Healthcare: Participants gained deeper awareness of AI's capabilities and limitations, ethical safeguards in research, and the future of lifespan healthcare. The sessions re-anchored human creativity, ethical responsibility, and multidisciplinary collaboration as core pillars of scientific advancement.
- Strengthened U.S.–Korea Global Collaboration: By bringing together key leadership and participants from KWiSE, WISET, KOFWST, and KWSE, the forums strengthened organizational ties between U.S. and Korean scientific institutions. This synergy laid a solid foundation for joint research initiatives, global mentoring programs, and sustained international exchanges.

6. Conclusions

The 2026 Women in STEM Forums at UKC successfully demonstrated that navigating the age of AI and advancing modern healthcare require both technological adaptability and strong human-centered values. While AI and advanced data tools expand research productivity and healthcare accuracy, scientific intuition, ethical rigor, interdisciplinary collaboration, and empathetic leadership remain indispensable. The strong turnout across both forums highlights the continuing demand for dedicated platforms that integrate technical research excellence with career development, mentoring, and global networking.

7. Group Photos








KWiSE-WISET
US-KOREA CONFERENCE
WOMEN in STEM FORUM
in collaboration with KOFWST-KWSE


Control of tissue homeostasis by TAZ
Normal homeostasis
Uncontrolled homeostasis




2026 Outstanding Woman Leadership Award

KWiSE-WISET Women in STEM 1 - KWiSE- KOFWST Forum

Empowering Women in the Age of AI: Breaking Barriers Across Generations

Thursday, Aug 6 3:15 - 5:00pm Colonial B Moderator : Hyunsook Park (California State University LA)

Time	Title and Speaker
3:15 - 3:20 pm	**Opening Remarks** Sung-Sil Moon (KWiSE President)
3:20 - 3:30 pm	**Welcoming Remarks** Hye On Yoon (WISET President)
3:30 - 3:40 pm	**Welcoming Remarks** Sun Mee Kang (KOFWST President)
3:40 - 3:45 pm	**Welcoming Remarks** Si Yeun Moon (Sookmyung Women's University President)
3:45 - 4:00 pm	**KWiSE-WISET Global Mentoring Award Ceremony**
	KWiSE-KOFWST Session
4:00 - 4:10 pm	**Session topic and speaker introduction** Hyunsook Park (KWiSE)
4:10 - 4:55 pm	**Paner Discussion** Dr. Hyunjung Kim (Sogang University) Dr. Ohbong Kwon (New York City College of Technology, President elected KSEA) Dr. Jae-Kyung Lee (University of Georgia) Dr. Dabae Lee (Kennesaw University) Dr. Youbin Kim (Icahn School of Medicine at Mount Sinai) Dr. Su Hyun Lee (St. Jude Children's Hospital) Ms. Namhee Lee (University of Georgia)
4:55 - 5:00 pm	**Closing Remarks/ Photo Session**

KWiSE-WISET Women in STEM 2 - KWiSE-KWSE Forum

The Future of Healthcare Across the Human Experience

Friday, Aug 7 1:00 - 3:00pm Augusta B Moderator : Youbin Kim (Icahn School of Medicine at Mount Sinai)

Time	Title and Speaker
1:00 - 1:05 pm	**Opening Remarks** Sung-Sil Moon (KWiSE President)
1:05 - 1:15 pm	**Welcoming Remarks** Eun Sook Hwang (KWSE Vice President)
1:15 - 1:30 pm	**KWiSE Outstanding Women Scientist Award Ceremony**
	KWiSE-KWSE Forum
1:30 - 1:50 pm	**From Cradle to Grave: Data Science for Women's Health Across the Life Course** Mikyong Shin (KWiSE Southeastern Chapter)
1:50 - 2:10 pm	**Modulation of stress-induced steroidogenesis** Eun Sook Hwang (Ewha Womans University)
2:10 - 2:30 pm	**Environmental Risk Factors in Pregnancy: Implications for Maternal and Fetal Health** Bo Young Park (California State University Fullerton)
2:30 - 2:50 pm	**Precision Sleep Health for Chronic Disease Prevention** Ji-Eun Park (Korea Institute of Oriental Medicine)
2:50 - 3:00 pm	**Closing Remarks/ Photo Session**

KSEA Joint Science Policy and Diplomacy Forum

Thursday, August 6 3:15 - 5:00pm Olympic

Co-Chairs



Jaehoon Yu

Professor
University of Texas
Arlington



Un-Ki Yang

Professor
Seoul National
University

Presenters and Panelists



Inkyu Park

Vice Minister,
MSIT



William Phillips

Fellow, NIST
Professor, Dept. of
Physics, University of
Maryland, Maryland



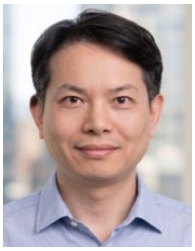
Kyoungl 8im Lee

Director,
Americas and
Asia Cooperation
Division, MSIT



Sowjanya Gollapinni

Senior staff scientist
Los Alamos National
Laboratory
Co-Spokesperson DUNE



Myung Hun Park

Professor, Seoul
National University
of Science and
Technology



Jayhyun Jo

Staff Scientist,
Brookhaven National
Laboratory

Science Policy and Science Diplomacy are intimately intertwined. This year, the joint forum of Science Policy and Science Diplomacy invites the directors of the Advanced Science Computing Research (ASCR) directorate in the U.S. Department of Energy which provides strong support on fundamental sciences, and of the Korean Ministry of Science and IT, together with prominent scientists from each country to serve on the panel.

The two directors will discuss the fundamental approach and the plan of close cooperation between the two countries on Artificial Intelligence (AI) and its roles on the basic science, in particular related to the DOE's Genesis Mission. Science policy must be established to ensure the U.S. and Korea to be a close partner to lead the science diplomacy for the good of the entire humanity in this rapidly changing world of AI.

- Hosting Presidents: Dr. Yong Kyu Yoon (KSEA), Dr. Oh Nam Kwon (KOFST)

Panel Members:

- National Institute of Science and Technology : Dr. William Phillips (Fellow)
- Ministry of Science & ICT, ROK: Dr. KyeongLim Lee (Director, America & Asia Cooperation)
- USA Scientist Expert: Dr. Sowjanya Gollipinni (DUNE Co-spokesperson)
- ROK Scientist Expert: Professor Myung Hun Park (Seoul National Univ. of Science and Technology)
- USA Scientist Expert: Dr. Jayhyun Jo (Brookhaven National Laboratory)

Time	Title and Speaker
3:15 – 3:25 pm	**Welcoming Remarks** Yong Kyu Yoon (KSEA President) & Oh Nam Kwon (KOFST President)
3:25 – 3:30 pm	**Congratulatory Remark** Inkyu Park (Vice Minister, MSIT, ROK)
3:30 – 3:40 pm	**Participant Photo** All participants
3:40 – 3:50 pm	**Importance and roles of humanity in AI World & of fundamental sciences** William Phillips (1997 Nobel Laureate, NIST, USA)
3:50 – 4:00 pm	**US DOE Genesis Mission and its Roles in Fundamental Sciences** Dr. Sowjanya Gollapinni (Co-Spokesperson, DUNE collaboration, Staff Scientist, Los Alamos National Lab, USA)
4:00 – 4:10 pm	**Pathways to U.S.-Korea Cooperation on Genesis Mission and Fundamental physics** Kyeonglim Lee (Director, Asia-Americas International Cooperation, MSIT, ROK)
4:10 – 4:30 pm	**Scientist Expert Short Statements** Myung-Hun Park (ROK) & Dr. Jayhyun Jo (USA)
4:30 – 4:55 pm	**Panel Discussion and Audience Q&A** Phillips, Lee, Park, Jo and Gollapini – Moderator: Jaehoon Yu
4:55 – 5:00 pm	**Closing** Jaehoon Yu and Un-Ki Yang

1. About the Forum

The KSEA Joint Science Policy and Diplomacy Forum discussed the integration of AI with fundamental science. Key speakers emphasized the need for sustained support for basic science research and ethical considerations in AI development, to ensure the roles humanity can play in the world of AI. The U.S. Genesis Mission, launched earlier in 2026 aims to double the efficiency and accelerate scientific discovery through AI and collaboration. Specific fundamental physics project like the US Flagship Deep Underground Neutrino Experiment (DUNE), the $5B international project is highlighted, showcasing AI's role in data analysis and experiment operation, as well as its role in promoting and training humanities to play its role. The forum underscored the importance of international cooperation, particularly between the U.S. and South Korea, to leverage AI's potential while maintaining human creativity and critical thinking in the fundamental scientific research. The action item from the forum was that both US and ROK governments should establish science policy that focuses on enhancing the roles of humanity in the AI world, taking full advantage of the creativity and analytical thought processing required for the fundamental science endeavor.

2. Detailed forum description

The special KSEA Science Policy Forum and Science Diplomacy Forum have been organized since UKC2017, as two separate but con-joined forums. This makes the forum to be the 11th since their creation to provide clear role of KSEA to take full advantage of its members to support the US-Korea cooperation. Since Science Policy and Diplomacy are intimately intertwined, a decision was made to hold them jointly starting 2024. The forum was co-chaired by professor Seung-Hwan Kim of Postech and professor Jaehoon Yu of the University of Texas at Arlington, in 2024. Since 2025, professor Un-Ki Yang of Seoul National University took over from professor Kim, as the Co-chair from the Korean side.

Co-chair professor Un-Ki Yang of Seoul National University opened the session with a warm welcome to the UKC 2026 KSEA Joint Science Policy and Science Diplomacy Forum. The opening of the session was followed by the welcome addresses of the presidents of KSEA and KOFST. President Yun of KSEA congratulated the organizers and emphasized the importance of science policy and diplomacy sessions. President Kwon of KOFST highlighted the historical collaboration between Korean and American scientists and the importance of partnerships in AI and basic science. Co-chair Yang then introduced Vice Minister Inkyu Park of MSIT, Republic of Korea, who discussed the significance of AI in transforming basic science and the need for sustained support for fundamental research, while identifying and strengthening the role of humanity, as in Fig. 1.(a). Ahe group photo, as in Fig. 1.(b) was taken before the start of the presentation and discussion part of the session.

The first speaker of the session, Dr. William Phillips, 1997 Nobel laureate in physics, shown in Fig.1.(c) discussed the role of humanity in the AI era. Dr. Phillips admit that he is not a user of AI technology. He, however, emphasized the importance



Figure. 1 (a) ROK MSIT Vice minister Dr. Inkyu Park giving a welcome speech (b) Group photo of the session with the speakers and participants (c) Dr. William Phillips, the 1997 Physics Nobel Laureate, giving the first presentation on AI and the roles of humanity (d) Dr. Sowjanya Gollapinni, a co-spokesperson of the US flagship DUNE experiment, presenting the US DOE Genesis Mission (e) Dr. Gollapinni and Vice Minister Dr. Inkyu Park engaged in discussion on Genesis Mission







of human creativity which is driven from human curiosity and the limitations of AI in generating revolutionary theories. Dr. Phillips suggested that AI should be seen as a tool that executes tasks better done by machines, while humans should focus on critical thinking and creativity.

Dr. Phillip's presentation was followed by Dr. Sowjanya Gollapinni, one of the two co-spokespersons of U.S. Particle Physics flagship experiment, the Deep Underground Neutrino Experiment (DUNE), discussed the U.S. Genesis Vision and its role in fundamental sciences. She explained how AI is transforming fundamental science, with examples from particle physics and the DUNE experiment, as shown in Fig.1.(d). Dr. Gollapinni highlighted the importance of responsible and meaningful implementation of AI in scientific research. She emphasized the needs for interdisciplinary training and collaboration to leverage AI effectively in fundamental science. Vice Minister Park asked a question on the Genesis Mission and its scope and timelines, as in Fig.1.(d).

Dr. KyeongLim Lee of the ROK MSIT discussed Korean Government's Perspective on AI and the role of fundamental science in science diplomacy and the potential for U.S.-Korea collaboration on the Genesis mission. She highlighted the importance of basic research in building trust and cooperation between countries. Dr. Lee mentioned the similarities between the U.S. Genesis Mission and Korea's Moonshot initiative. She called for the involvement of basic researchers in identifying and proposing collaborative projects between the two countries.

Dr. Myung-Hun Park of the Seoul National University of Science and Technology and a leading physicist in Korea on the use of AI, discussed the challenges of using AI in fundamental science, particularly in particle physics. He emphasized the need for new observations and data to drive AI's creativity and avoid the pitfalls of using AI-generated data. Dr. Jayhyun Jo of the Brookhaven National Laboratory and a leading AI physicist within the DUNE collaboration, highlighted the potential of AI in pattern recognition and data analysis in large-scale experiments like DUNE. He called for continued investment in fundamental science to support AI-driven research and to ensure its long-term success.

The presentations were followed by the discussion session. Dr. Jaehoon Yu, a co-chair of the forum summarized the key points discussed and emphasizes the importance of humanity in the AI era. He called for responsible policies to support training and empowering people to use AI effectively. The ensuing discussions revolved around the fact that a curiosity driven creativity enables humans to find their positions as a wise user and a validator of the AI, and the fundamental sciences plays the roles for training humans to fulfil this role. In this regard, the US and ROK governments developing a policy that strengthens and further solidifying the training aspect of the fundamental sciences and further enhances collaborations in such endeavor as DUNE.

In conclusion, Dr. Yu highlighted the need for international cooperation and collaboration to leverage AI in fundamental science. The meeting concluded with a call for action to implement the discussed ideas and foster continued collaboration between the U.S. and Korea in AI and fundamental science. One action item from the forum discussion was on both US and ROK agencies to develop a strategic plan for training program for humans to play their roles as a wise user of the AI tools. The forum finished with a promise to revisit and follow up the action item at the UKC2027 forum.

KSEA University Leadership Forum

Navigating the AI Frontier: Transforming University Education, Research, and Administration

Friday, August 7 12:00 - 3:00pm Congressional B

Chair



Yongho Sohn

Pegasus Professor
University of Central Florida (UCF)

Co-Chair



Soyoon Kum

Assistant Professor
Angelo State University (ASU)

Presenters



Stephen M. Kuebler

Professor and
Founding Director of
UCF Center for Ethics



Dong Hwan Kim

President of
Seoul National
University of Science
and Technology

Panelists



Hyang-Sook Lee

President of Ewha
Womans University



Si Yeun Moon

President of
Sookmyung
Women's University



Keechoo Choi

President of
Ajou University



Kunwoo Lee

President of
Daegu Gyeongbuk
Institute of Science
and Technology
(DGIST)



Jin Hwe Kweon

President of
Gyeongsang National
University



Kyeongho Lim

President of Kongju
National University



Seong Taek Yun

Executive Vice
President of
Research
Korea University



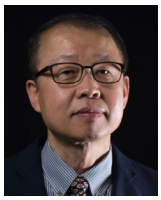
Dong-Hyun Baek

Executive Vice
President of
ERICA, Hanyang
University



Dong Seog Han

Vice President
for Research
of Kyungpook
National University



Hyoung Jin Cho

Professor and Chair
Mechanical and
Aerospace Engineering
University of Central
Florida

Time	Title and Speaker
12:00 - 1:00 pm	**Group Lunch**
1:00 - 1:05 pm	**Welcoming Remarks from Chairs** Yongho Sohn (University of Central Florida) and Soyoon Kum (Angelo State University)
1:05 - 1:25 pm	**AI Leadership and the New Three Rs: Responsibility, Relevance, and Reason** Stephen M. Kuebler (University of Central Florida)
1:25 - 1:35 pm	**From AI Adoption to AI Transformation: Building an AI-Ready University – The Experience of Seoul National University of Science and Technology** Dong Hwan Kim (Seoul National University of Science and Technology - SeoulTech)
1:35 - 2:50 pm	**Panel Discussion**
2:50 - 3:00 pm	**Closing Remarks and Photo Session**

1. About the Forum

The 9th KSEA University Leadership Forum was held jointly with the Korean Federation of Science and Technology Societies (KOFST) as part of UKC 2026 in Orlando, Florida. This year's forum, "***Navigating the AI Frontier: Transforming University Education, Research, and Administration***," brought together university presidents, executive vice presidents of research, and senior faculty leaders from the United States and Korea to examine how artificial intelligence is reshaping teaching, research, and institutional governance. The forum combined two invited talks with an extended panel discussion structured around six critical questions facing higher education leadership.

2. Program and Participants

Dr. Yongho Sohn (University of Central Florida) and Dr. Soyoon Kum (Angelo State University) served as Chair and Co-Chair, respectively. The two presentations were delivered by Dr. Stephen M. Kuebler, Professor and Founding Director of the UCF Center for Ethics, and Dr. Dong Hwan Kim, President of Seoul National University of Science and Technology (SeoulTech). The panel comprised eleven university leaders: Dr. Hyang-Sook Lee (President, Ewha Womans University), Dr. Si Yeun Moon (President, Sookmyung Women's University), Dr. Keechoo Choi (President, Ajou University), Dr. Kunwoo Lee (President, DGIST), Dr. Jin Hwe Kweon (President, Gyeongsang National University), Dr. Ju Han Kim (Executive Vice President of Research, Seoul National University), Dr. Seong Taek Yun (Executive Vice President of Research, Korea University), Dr. Dong-Hyun Baek (Executive Vice President, ERICA, Hanyang University), and Dr. Hyoung Jin Cho (Professor and Chair, Mechanical and Aerospace Engineering, University of Central Florida).

The session opened with a group lunch, followed by welcoming remarks, the two invited presentations, an extended panel discussion, and closing remarks with a photo session.

3. Session Highlights

AI Leadership and the New Three Rs: Responsibility, Relevance, and Reason. Drawing on his experience at the University of Central Florida, Stephen M. Kuebler opened by observing that education has changed dramatically from the traditional "three Rs" of Reading, wRiting, and aRithmetic, as technology now shapes nearly every dimension of university life. He noted that universities today are grappling with the role of AI across their curricula, research, administration, and human resources alike. In response, he proposed a new "***three Rs***" for the AI era — Responsibility, Relevance, and Reason — as an ethical framework to help ensure that AI adoption ethically advances, rather than undermines, a university's core mission.

From AI Adoption to AI Transformation: The SeoulTech Experience. Dong Hwan Kim presented SeoulTech's institution-wide approach to becoming an "***AI-ready university.***" He described resistance to AI adoption as strongest among staff, and outlined the university's response: mandatory AI training across the institution. He noted that even staff without technical AI expertise — including those from the liberal arts and other non-technical areas — have used this training to meaningfully improve university systems and operations, illustrating that AI transformation at SeoulTech has extended beyond research and instructional units into general administration.

4. Panel Discussion

The panel discussion addressed six critical considerations for AI in higher education leadership:

- Governing the Ungovernable: moving from AI principles to enforceable, adaptive governance structures that keep pace with rapidly evolving capabilities.
- Academic Integrity: whether the answer lies in better detection and policing, or in a fundamental reimagining of authentic assessment in an AI-saturated environment.
- Amplified or Eroded Equity: who benefits from AI-personalized learning, and whether historically underserved students are being supported or further sorted by algorithmic systems.
- Research Authorship: how universities should define and enforce disclosure norms across disciplines where AI is now embedded in every stage of scholarship.
- Global Convergence or Divergence: whether an international governing body is needed specifically to regulate AI in higher education.

- The Workforce Question: universities' ethical obligations toward staff and faculty whose roles are being redefined or eliminated by automation.

Panelists shared institutional experiences and perspectives across all six questions. A clear consensus emerged this year that stood in contrast to prior discussions: AI cannot be denied or resisted outright; institutions must adopt and adapt to it deliberately, using it wisely while training their communities to do the same. Panelists agreed this shift is inevitable rather than optional.

A second point of consensus was that universities must define their value beyond the transmission of knowledge, since knowledge itself is increasingly accessible through AI and other sources. Panelists argued that experience, teamwork, and other forms of learning that cannot be replicated by AI should become the focus of innovation in AI-era education, positioning universities to provide what AI cannot.

This represented a marked shift from the prior year's forum, at which most participating universities had not yet developed institutional responses to AI. This year, by contrast, every participating university reported having its own AI training or programming in place and was actively providing AI infrastructure and resources to its faculty, staff, and students.

5. Conclusion

This year's forum was notable for the degree of convergence across US and Korean institutions, with Chair Yongho Sohn and Co-Chair Soyoon Kum both representing US institutions moderating a discussion that reflected how quickly the landscape has shifted. Rather than debating whether to adopt AI, university leaders are now comparing concrete strategies for governance, training, assessment redesign, and workforce transition. Korean university leadership in particular stood out for the speed of their institutional response, having moved swiftly to implement AI training programs and provide faculty, staff, and students with expanded AI resources and infrastructure. The discussion reinforced that institutional AI readiness has moved, within a single year, from an emerging concern to a baseline expectation, and that the more difficult work ahead lies in equity, authorship norms, and defining the distinctly human value universities offer their students.

6. Group Photo



KSEA R&D Leadership Forum

Roundtable discussion on Leveraging Frameworks for US-Korea Institutional Research Collaboration

Friday, August 7 12:00 - 3:00 pm Congressional A

Chair



Ohbong Kwon

Associate Professor New York City College of Technology

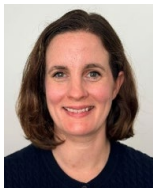
Co-Chair



Tae (Tom) Oh

Professor/Strategic Initiatives and Innovation Director Rochester Institute of Technology

Presenter



Stacey Standridge

Acting Deputy Office Head of National Science Foundation

R&D Leaders from Korea



Kwon, Oh Nam

President of KOFST



Dong Seob Kang

Director General of NRF/KUSCO



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President of KIRD



Hye On Yoon

President of WISET



Yeongkook Oh

President of KFE



Max Chang

US Business Development Manager, LINER



Chang-Jeon Hwang

Vice President of KARI



Ji Woong Yoon

President of Science and Technology Policy Institute



Chang Hoon Lee

Vice President of KIMS

Time	Title and Speaker
1:00 - 1:10	**Welcoming Remarks** Ohbong Kwon (New York City College of Technology)
1:10 - 1:30	**Keynote Talk-** "***Collaboration by Design: Leveraging NSF Programs for Enduring U.S.–Korea Research Partnerships***" Stacey Standridge (NSF)
1:30 - 2:50	**Round Discussion and brainstorming with the participating institutes** • Oh Nam Kwon, President, Korean Federation of Science and Technology Societies (KOFST) • Dong Seob Han, Director General, Directorate for International Affairs,, National Research Foundation (NRF) • Hyunchul(Huey) Kim, President of KHIDI USA, Korea Health Industry Development Institute (KHIDI) • Hwan IL Yoo, Chief Representative, Korea Institute for Advancement of Technology (KIAT) US office • Taemin Bae, President, Korea Institute of Human Resources Development in Science and Technology (KIRD) • Hye On Yoon, President, Korea Foundation for Women In Science, Eng. and Technology (WISET) • Yeongkook Oh, President, Korea Institute of Fusion Energy (KFE) • Max Chang, US Business Development Manager, Liner • Chang-Jeon Hwang, Vice President, Korea Aerospace Research Institute (KARI) • Ji Woong Yoon, President, Science and Technology Policy Institute (STEPI) • Chang Hoon Lee, Vice President, Korea Institute of Materials Science (KIMS)
2:50 - 3:00	**Concluding Remarks and Photo session**

1. About the Forum

- The KSEA R&D Leadership Forum at the US-Korea Conference (UKC 2026) serves as the premier annual platform connecting leadership across U.S. federal funding agencies and South Korea's foremost governmental research institutes, policy bodies, funding agencies, and academic leadership. UKC 2026 focused on translating dialogue into tangible action.
- Held on August 7, 2026, the forum convened over a networking luncheon and a comprehensive two-hour executive session. The core objective of this year's forum was to explore how participating organizations and research leaders can leverage existing federal frameworks, multilateral mechanisms, and NSF funding opportunities to cultivate durable, mutually beneficial research partnerships, advance scientific excellence, and reinforce international science diplomacy.

2. Introduction and Welcoming Remarks

- The session commenced with official welcoming remarks delivered by Forum Chair Prof. Ohbong John Kwon. Prof. Kwon extended a warm welcome to the distinguished delegation of institutional presidents, vice presidents, directors, and researchers from South Korea, as well as U.S.-based research leaders.

3. Presentations

Dr. Stacey Standridge delivered the keynote address, reflecting on the milestone of 50 years of U.S.-Korea scientific cooperation built on mutual trust, scientific excellence, and a shared dedication to fundamental research in critical technologies essential to national prosperity and security. She posited that enduring bilateral and multilateral success relies on "***Collaboration by Design***," unpacking four foundational design principles:

1. Design Principle #1: Start with Scientific Excellence (PI-to-PI Catalyzed by NSF)
2. Design Principle #2: Build Trust through Partnerships (Direct Bilateral Ties)
3. Design Principle #3: Invest in People (Workforce Development & Exchange)
4. Design Principle #4: Design for What's Next (Multilateral Engagement & Global Centers)

4. Panel Discussion

The panel discussion proceeded in an interactive format where each representative first introduced their organization, outlining its institutional mission and priority research portfolios. Leaders from specialized national research institutes—including KARI (aerospace), KFE (fusion energy), and KIMS (advanced materials)—highlighted their current high-impact R&D initiatives, cutting-edge facilities, and strategic areas with high potential for bilateral synergy. In parallel, executives from funding, policy, and workforce organizations—such as NRF, KOFST, STEPI, KIAT, KIRD, and WISET—presented their institutional strategies for science diplomacy, policy alignment, industry translation, and talent development. Building upon these introductions, the participants engaged in a focused dialogue on actionable strategies for ***leveraging existing frameworks for U.S.-Korea institutional research collaboration***.

5. Group Photo



KOFST Next Generation Alumni Forum

"Roots & Reach"

Friday, August 7 1:00 - 3:00pm ChampionsGate

Chair



Clara Kim

Medical Impact Lead,
Boehringer Ingelheim

1. About the Forum

The KOFST YGF·YPF Alumni Forum, held as part of the 2026 UKC (U.S. - Korea Conference on Science, Technology, and Entrepreneurship), was organized and conducted under the theme "***Roots & Reach***." The forum brought together past YGF·YPF participants to share their personal and professional growth while creating meaningful connections to strengthen the KSEA alumni network for future generations.

The program consisted of opening remarks, participant introductions and Core Memory sharing, 2026 conference presentations, an open discussion on global citizenship, and a closing letter-writing activity titled "***A Letter to Future Participants***." Throughout the sessions, participants demonstrated a high level of engagement and actively contributed to the discussions.

As a highlight of the forum, every participant wrote a personal message to future YGF·YPF participants during the final letter-writing activity. These letters were subsequently shared with KSEA YG leadership and are scheduled to be presented at UKC 2027. Beyond serving as a one-time forum activity, this initiative represents a meaningful and lasting resource for strengthening emotional connections among alumni and facilitating the transfer of knowledge, experiences, and values across generations.

Time	Title and Speaker
1:00 - 1:10 pm	**Welcoming Remarks**
1:10 - 1:20 pm	**"*Where Are We Now*?" Lightning Round**
1:20 - 1:40 pm	**Alumni Spotlight: Then vs. Now**
1:40 - 1:50 pm	**Global Citizenship in Practice — Panel + Audience Q&A**
1:50 - 2:10 pm	**Small Group Challenge: "*What Should YGF/YPF Build Next?*"**
2:10 - 2:40 pm	**Letter to a Future YGF/YPF Participant**
2:40 - 3:00 pm	**Closing Remarks + Photo Session**

2. Program

- **Opening Remarks**: The forum began with opening remarks from the KOFST President, who introduced the broader context of the ongoing partnership between KOFST and the KSEA alumni community and set the stage for the purpose and vision of the forum.
- **Participant Introductions & Core Memory Sharing**: Each participant briefly introduced themselves by sharing their name, YGF/YPF participation year, current role, and a one-sentence description of their current work, followed by their most memorable experience from their YGF/YPF journey. The moderator set the tone by first sharing personal experiences from YGF 2016 and YPF 2018, creating a welcoming atmosphere for participants to open up and engage.

- **Global Citizenship Open Discussion**: A highly interactive, all-participant discussion centered on three questions: ① the realities of navigating a global context as a Korean American scientist or engineer in everyday life, ② experiences in which Korean identity unexpectedly became a professional strength, and ③ the KSEA activities that would have been most valuable to each participant five years ago.
- **"A Letter to Future Participants" Activity**: Participants wrote 2–3 sentence messages on Post-it notes for those attending YGF·YPF for the first time. Following approximately 10–12 minutes of quiet individual reflection and writing, all messages were collected. The activity served as an emotional highlight of the overall session.
- **Closing Remarks and Group Photo**: The session concluded with the moderator highlighting memorable moments from the discussion and offering words of appreciation to KOFST and all participants, followed by a group photo.

3. Discussion — Global Citizenship Discussion

The "***Global Citizenship in Practic***e" session (1:45–2:05 PM, 20 minutes) was conducted as an open, all-participant discussion centered on three pre-prepared questions. Each question was given sufficient time for participants to respond and build naturally on one another's comments. The third question, in particular, generated the most specific and actionable ideas. The key discussion points are summarized below.

① The Global Reality of Korean American Scientists and Engineers

The first question—"***What does it really look like to live and work in a global context as a Korean American scientist or engineer in everyday life—not an idealized version, but the reality***?"—prompted candid reflections on the challenges of navigating minority identity within professional organizations and finding a sustainable balance between adaptation and authenticity.

- Participants shared experiences of continuously balancing adaptation to mainstream organizational cultures with maintaining their Korean identity.
- Concerns were raised that a cultural tendency toward "***quiet expertise***" may sometimes be undervalued in leadership opportunities, particularly in decision-making settings.
- At the same time, some participants shared that, as they gained more professional experience, they came to view their identity as a differentiating strength, highlighting a shift in perception between the early and later stages of their careers.

② Moments When Identity Became a Professional Strength

The second question—"Where has your Korean identity unexpectedly become a genuine professional strength?"—encouraged participants to share specific experiences and real-world examples.

- One participant described becoming a natural cultural translator and intermediary on projects involving stakeholders from both Korea and the U.S., using that role to build trust and facilitate collaboration.
- Several participants noted that a strong emphasis on attention to detail and relationship-centered collaboration had contributed positively to building long-term partnerships and trust with clients and colleagues.
- Multiple examples were shared of Korean-based professional networks, including KSEA, becoming tangible career assets by providing access to connections, collaboration opportunities, and information.

③ Gaps KSEA Can Help Address

- The third question—"***What KSEA activity would have made the greatest difference for you five years ago?***"—generated the most active response. As noted in the moderator's session notes, this was the point at which the most actionable ideas emerged, resulting in several specific and practical recommendations.

- Structured Mentorship Matching: The recurring need for a formal mentor–mentee program connecting participants by industry and professional role was highlighted.
- Industry-Specific Networking: Participants expressed a need for smaller, industry-focused networking groups beyond broad STEM networking, with examples including pharmaceuticals and biotechnology, semiconductors, and engineering.
- Early-Career Support: There was clear demand for practical early-career support programs for graduate students and junior professionals, including résumé reviews, mock interviews, and interview preparation.
- Sustained Alumni Connections: Several participants requested that intergenerational networking sessions such as this forum become recurring programs rather than one-time events, allowing alumni connections to continue over time.

Summary

Toward the end of the discussion (approximately 2:03 PM), the moderator immediately synthesized and shared the key themes that had emerged from the three questions. In particular, three actionable priorities—mentorship, industry-specific networking, and early-career support—were clearly identified and used to transition naturally into the next activity. These three recommendations also provide a basis for the proposals outlined in Section 6, "***Future Recommendations***."

4. Session Highlights

As the emotional highlight of the event, this activity invited all participants to write a message to future YGF or YPF participants in response to the prompt: "What is something you wish someone had told you before you attended YGF or YPF for the first time?" All messages were collected and delivered to KSEA YG leadership, with plans to share them publicly at the UKC 2027 Forum.

5. Selected Participant Testimonials



These messages converged around three emotional themes—belonging, the serendipity of networking, and self-confidence—which closely align with the core values that the KSEA YG network seeks to convey to new participants.

6. Outcomes and Key Implications

- **Full-Session Engagement:** Active participation was observed from all attendees across every session, including introductions, discussion, and the letter-writing activity. This supports the effectiveness of the session design, including the 90-second introductions, three-stage discussion questions, and dedicated individual writing time.
- **Intergenerational Community-Building**: The messages created through the letter-writing activity were transformed into a tangible resource to be carried forward to UKC 2027, marking a meaningful step toward evolving a one-time event into a sustainable alumni program.
- **Qualitative Insights**: The recommendations for KSEA that emerged from the Global Citizenship discussion—including mentorship, industry-specific networking, and early-career support—provide actionable insights that can be directly incorporated into the planning of future KSEA YG programs.

7. Closing

"The notes you wrote today will be opened by someone next year. That is what makes this gathering more than just a conference– it makes it a community."

- Clara Kim, Chair

8. Group photo



Scholarship Winners

2026 KSEA - KUSCO Graduate Scholarship Winners



Alice Lee
University of Pittsburgh School of Medicine



Da Hae Choi
Albert Einstein College of Medicine



Dayoung (Gloria) Lee
Columbia University



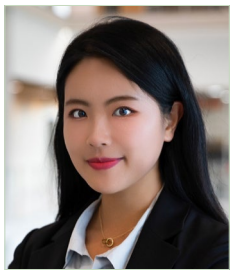
DongHun Ryu
Massachusetts Institute of Technology



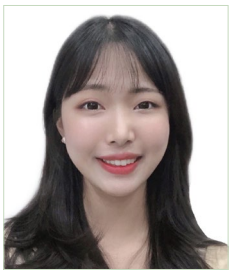
Gyuwan Kim
University of California Santa Barbara



Jeong Hui Kim
Purdue University



Jiin Ryu
University of Florida



Kaeul Lim
Purdue University



Kihoon Yuk
University of Maryland, College Park



Kihyeon Ahn
Virginia Tech



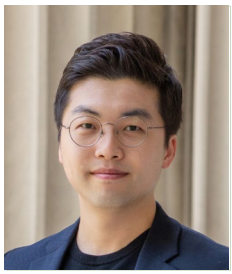
Kyujin Ko
University of Cincinnati



Michael Kim
Johns Hopkins University



Namhee Lee
University of Georgia



Sanghyun Park
Massachusetts Institute of Technology



Soojung Lee
Columbia University



TJ (Tae Joong) Park
Massachusetts Institute of Technology



Uk Jin Lee
Cornell University Weill Cornell Medicine



Ye Eun Koo
Boston University Chobanian & Avedisian School of Medicine



Yeijin Kim
University of Texas at Austin



Yujin Lee
University of Texas at Austin

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KARI 한국항공우주연구원 Korea Aerospace Research Institute

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The Korea-U.S. Science Cooperation Center (KUSCO) is a non-profit organization established in Vienna, Virginia, founded in 1997, to accomplish two major missions: to enhance cooperative efforts in S&T between Korea and the U.S. and to support Korean - American scientists & engineers in the United States.



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The vision of KUSCO is *"Advancement of the S&T collaborations between Korea and the U.S."*
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- To support and leverage Korean-American scientists and engineers

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- Enhance scientific and technological development of both Korea and the U.S.
- Support mutual cooperation and initiate joint programs with U.S. and Korean scientific and engineering societies, academic universities, and other institutions
- Assess significant trends in scientific research and technological developments affecting Korea and the U.S.
- Assist young Korean-American and other scientists in developing and maintaining networks addressing matters of scientific and technical interest to the two countries



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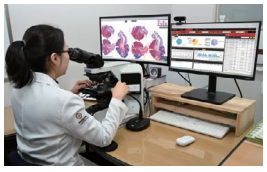
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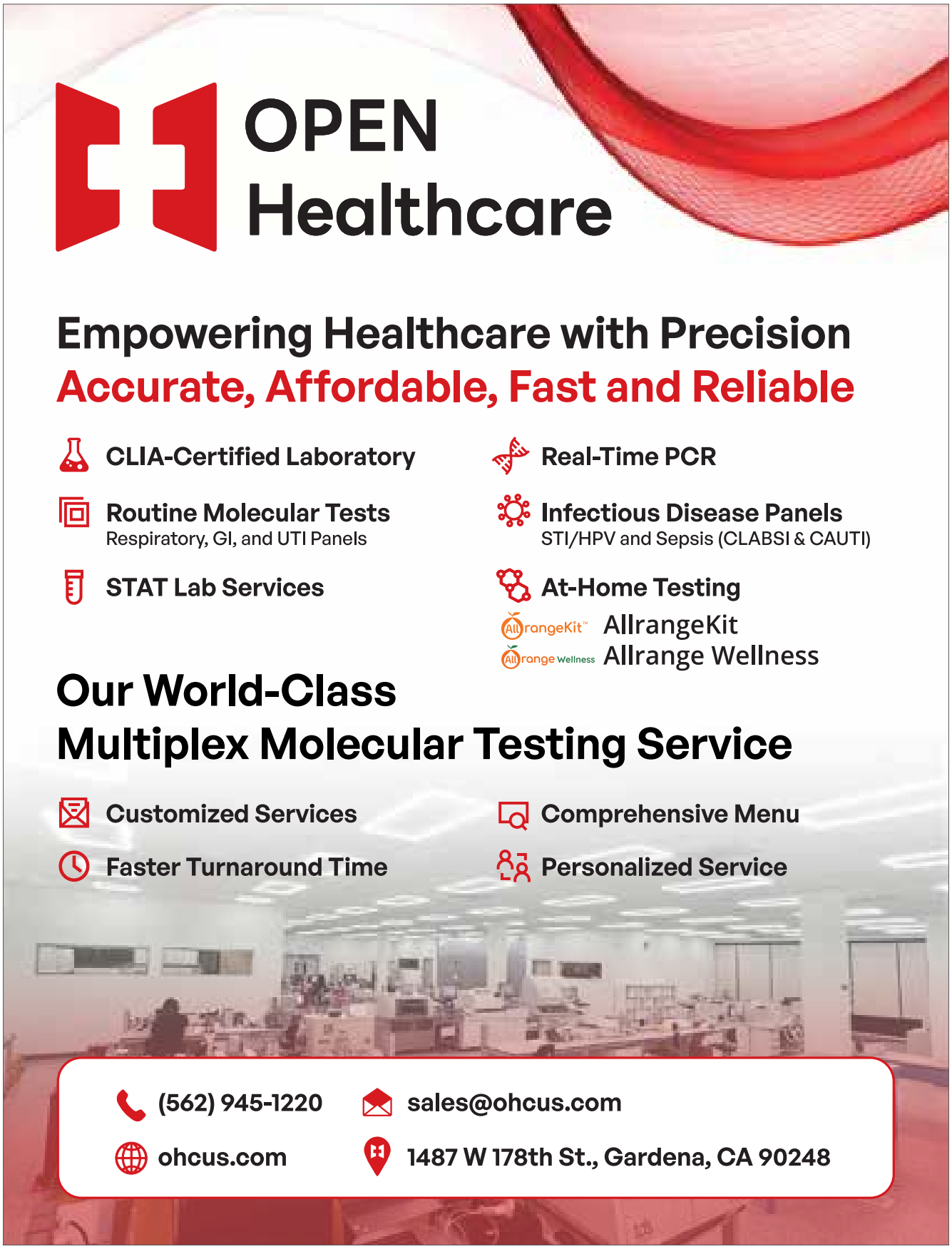

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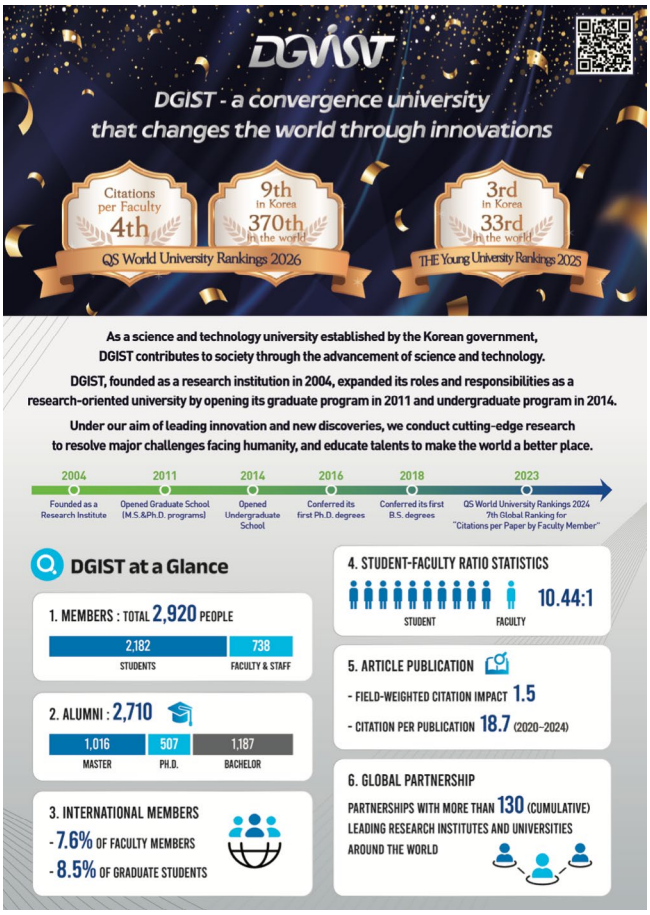

KIAT
Korea Institute for Advancement of Technology
www.kiat.or.kr
Innovative growth platform leading the future of industrial transformation
The Korea Institute for Advancement of Technology(KIAT) creates policies for industrial technology innovation in Korea and provides comprehensive support for research infrastructure, commercialization funding, technology development, regulatory innovation,human resource development, and international cooperation.
KIAT will support technological innovation so that Korean technology can contribute to improving the quality of human life and building a better world.
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1,272
GPU 대규모 검증
더 많은 GPU가 아니라,
더 나은 운영입니다.
AI 인프라 경쟁의 축은 '얼마나 확보했는가'에서 '얼마나 잘 운영하는가'로 옮겨갑니다. GPUBASE는 이미 확보한 연산의 잠재력을 마지막 1마일까지 끌어냅니다.
K-Scale Evaluation
3개 클러우드 독립 검증 · 7종 이기종 GPU
작업 완료시간 −34% · 대기시간 −93%
MEET ACRYL · 글로벌 K테크 포럼 in UKC 2026
8월 7일(금) 13:00–15:00 · Olympic Room
앵커 발표 13:30 · UKC 공식 K-EnterTech Hub 스폰서 포럼
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그리고 미래를 잇습니다
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양양군 협력, 지역 현안
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국가과학기술연구회가
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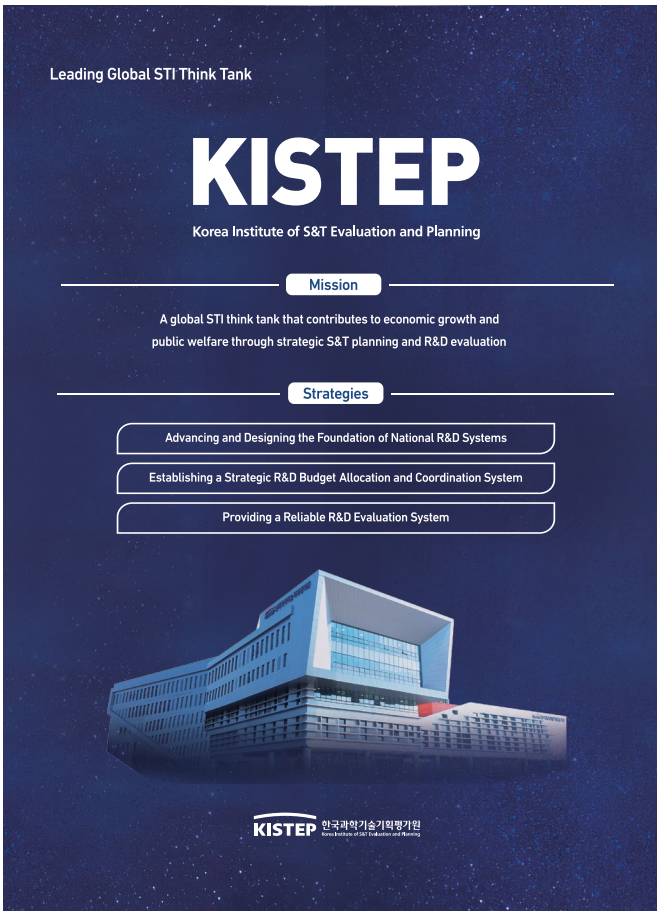

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370th in the world
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33rd in the world
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DGIST contributes to society through the advancement of science and technology.
DGIST, founded as a research institution in 2004, expanded its roles and responsibilities as a
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Under our aim of leading innovation and new discoveries, we conduct cutting-edge research
to resolve major challenges facing humanity, and educate talents to make the world a better place.
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2011 Opened Graduate School (M.S.&Ph.D. programs)
2014 Opened Undergraduate School
2016 Conferred its first Ph.D. degrees
2018 Conferred its first B.S. degrees
2023 QS World University Rankings 2024 7th Global Ranking for "Citations per Paper by Faculty Member"
DGIST at a Glance
1. MEMBERS : TOTAL 2,920 PEOPLE
2,182 STUDENTS
738 FACULTY & STAFF
2. ALUMNI : 2,710
1,016 MASTER
507 PH.D.
1,187 BACHELOR
3. INTERNATIONAL MEMBERS
- 7.6% OF FACULTY MEMBERS
- 8.5% OF GRADUATE STUDENTS
4. STUDENT-FACULTY RATIO STATISTICS
10.44:1
STUDENT
FACULTY
5. ARTICLE PUBLICATION
- FIELD-WEIGHTED CITATION IMPACT 1.5
- CITATION PER PUBLICATION 18.7 (2020-2024)
6. GLOBAL PARTNERSHIP
PARTNERSHIPS WITH MORE THAN 130 (CUMULATIVE)
LEADING RESEARCH INSTITUTES AND UNIVERSITIES
AROUND THE WORLD

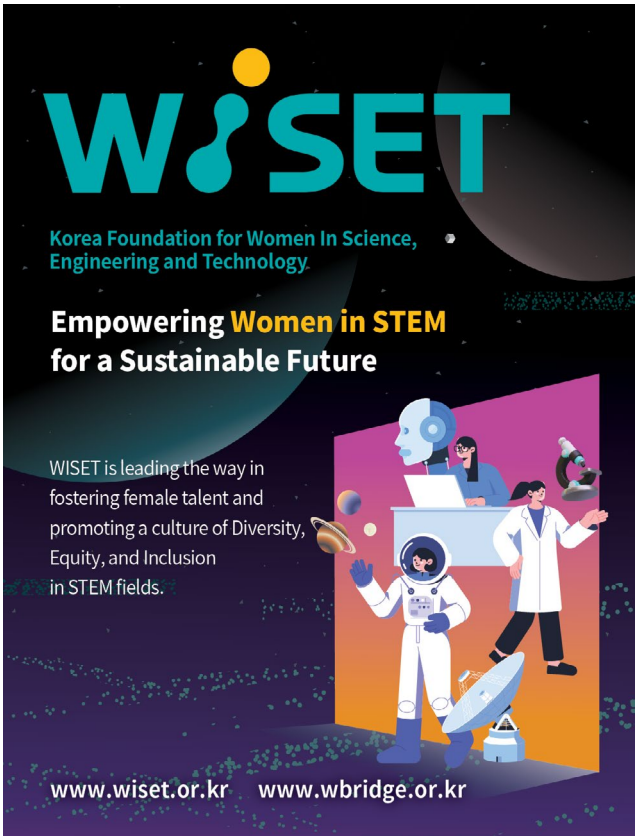

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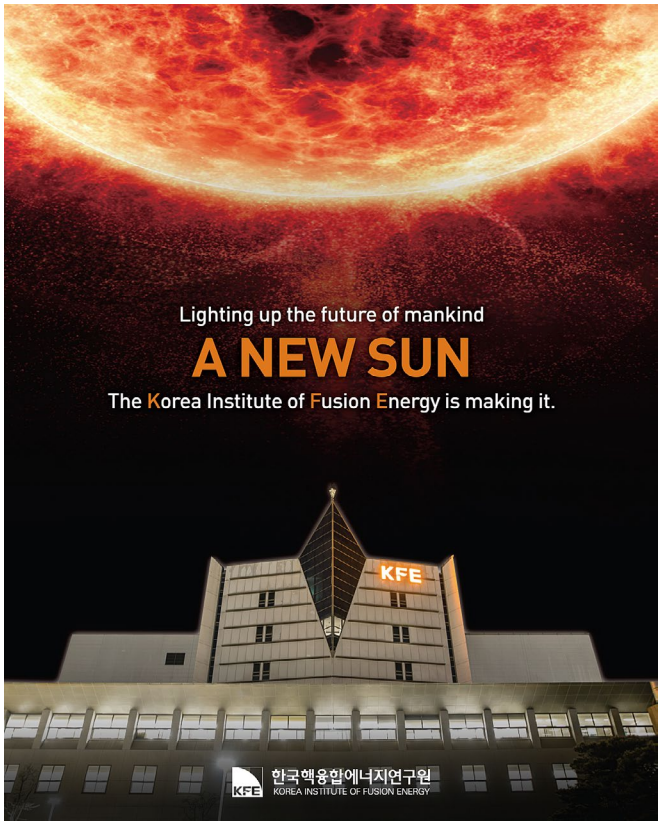

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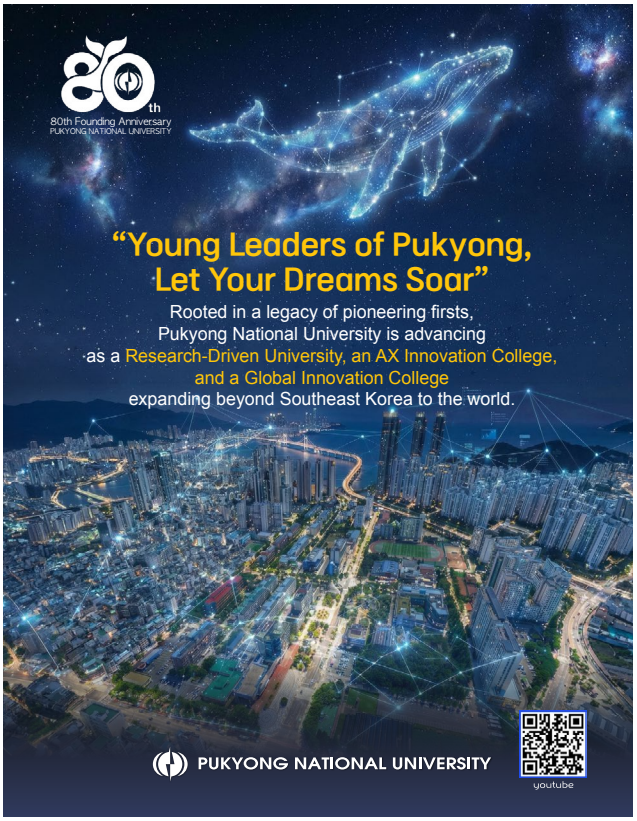

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과학기술인의 생애주기 및 커리어 맞춤형
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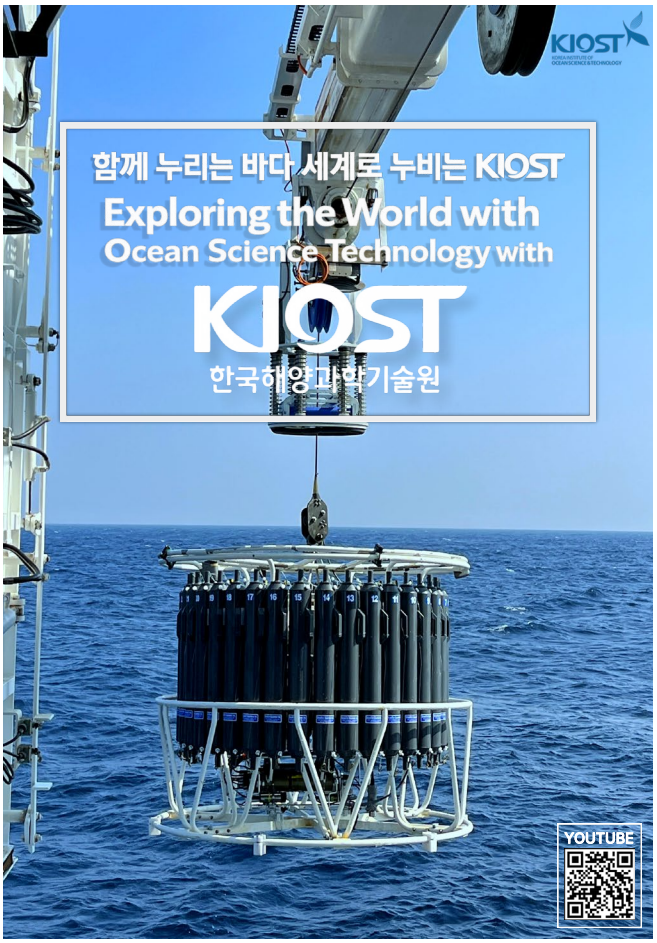

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Establishing a Strategic R&D Budget Allocation and Coordination System
Providing a Reliable R&D Evaluation System
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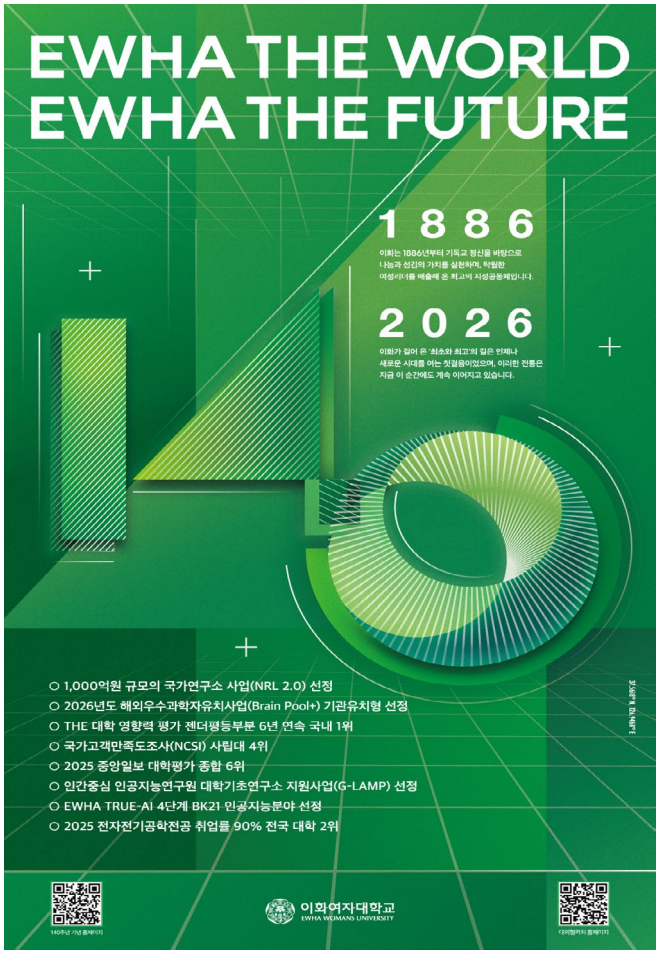

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Korea Advanced Nano Fab Center (KANC) is Korea's national core R&D infrastructure in the field of nanotechnology. KANC's main goals are to establish a world-class nano facility for compound semiconductor-based nano devices and to offer its services to users worldwide. The center was established in 2003 and is located in East Suwon, the heart of Korea's semiconductor industry, funded by the government. KANC built a state-of-the-art facility in April 2006 and provides both domestic and international users with the best possible service through user-oriented operations.
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- Promotion of the commercialization of research achievements and start-up support for related companies
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○ 2026년도 해외우수과학자유치사업(Brain Pool+) 기관유치형 선정
○ THE 대학 영향력 평가 젠더평등부분 6년 연속 국내 1위
○ 국가고객만족도조사(NCSI) 사립대 4위
○ 2025 중앙일보 대학평가 종합 6위
○ 인간중심 인공지능연구원 대학기초연구소 지원사업(G-LAMP) 선정
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○ 2025 전자전기공학전공 취업률 90% 전국 대학 2위
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AI 특화 단과대학 설립 (2019)
바이오의과학 GLP, GCP 선정 (2024)
중소벤처기업부 TIPS 운영사 선정 (2024)
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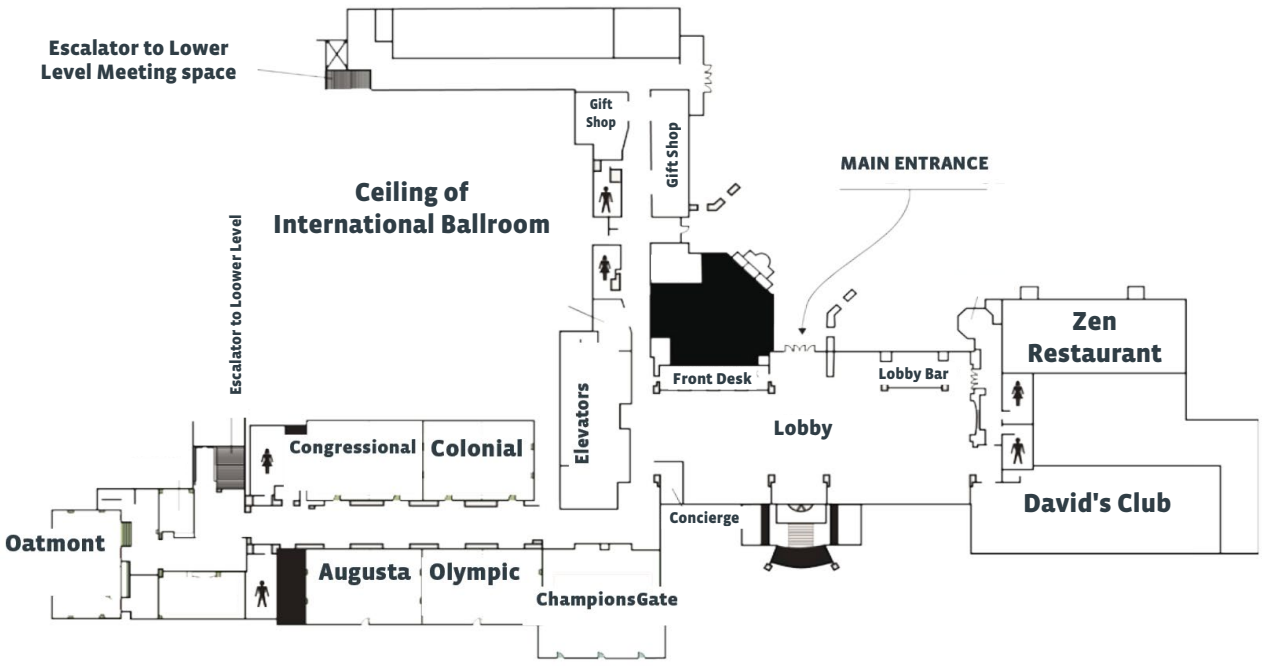

2026
한국건설기술연구원
신입직원
공개채용
접수기간
2026.08.03.(월)
~ 2026.08.18.(화)
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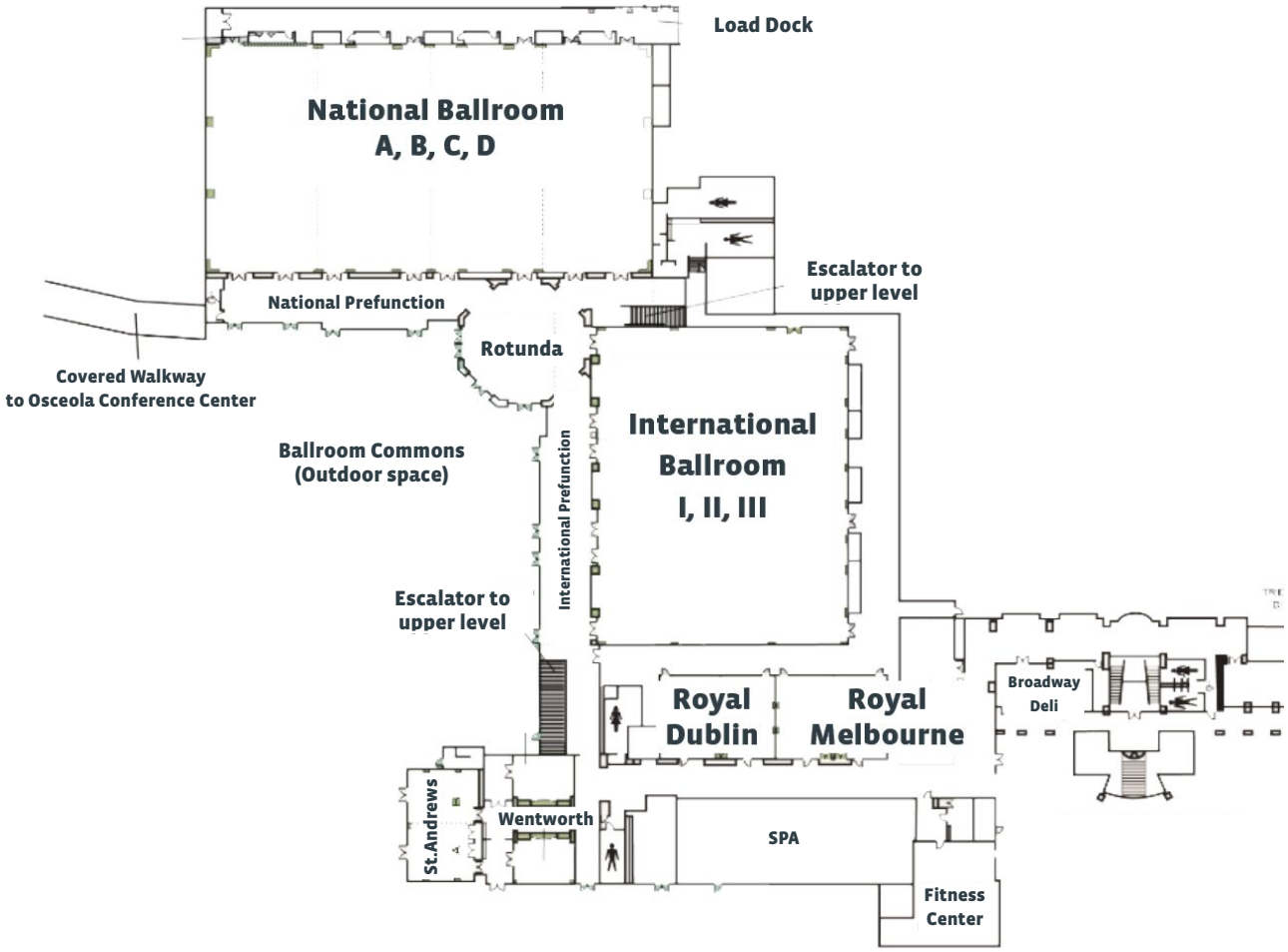

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Conference Venue Map

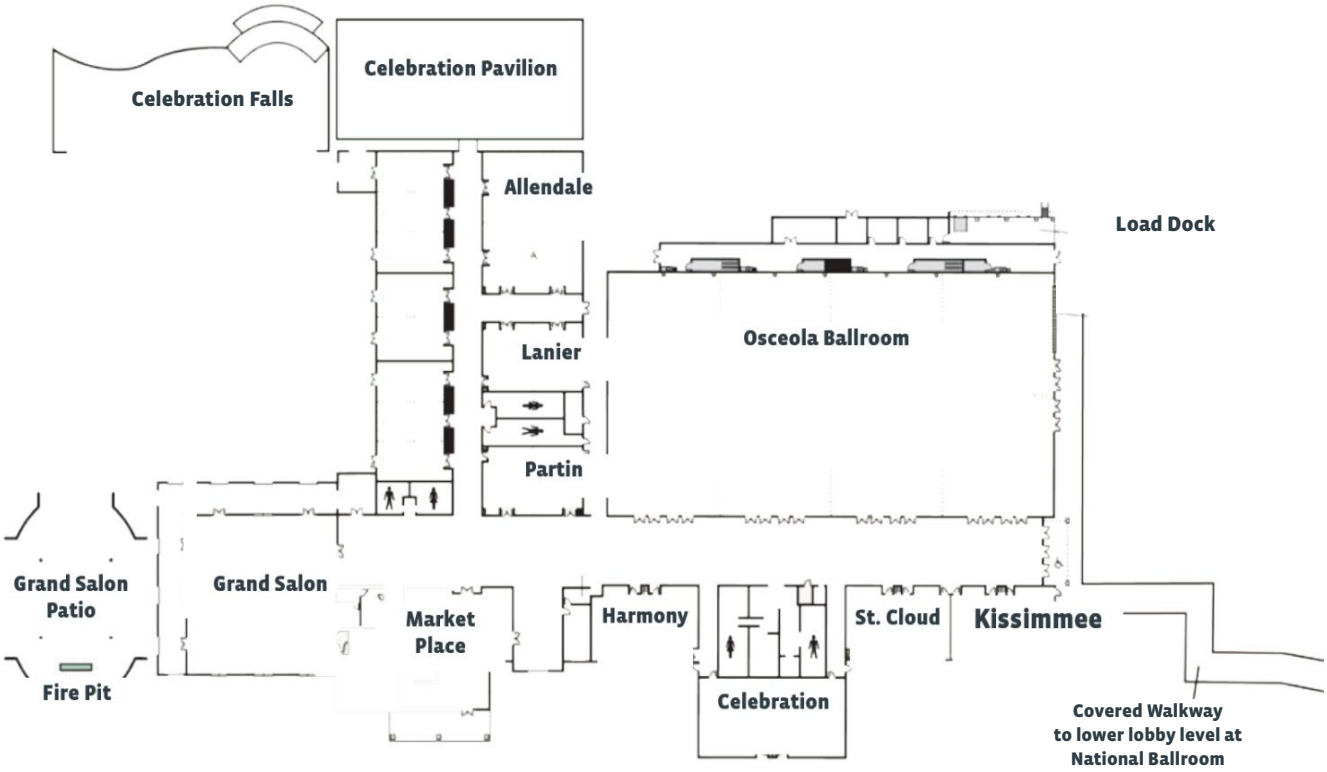
Lobby Level



Lower Lobby Level



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From Imagination
to Innovation - Into Reality

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