KASBP 2023 FALL SYMPOSIUM

INCREASING THE PROBABILITY OF SUCCESS IN DRUG DISCOVERY + DEVELOPMENT

11.03 -11.04 | HANOVER MARRIOTT : 1401 NJ-10 E, Whippany, NJ 07981

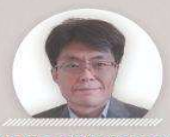
KASBP-DAEWOONG ACHIEVEMENT AWARD

HOLLY KIMKO | Global Head of Systems Medicine (Executive Director) | AstraZeneca

SCIENTIFIC SESSION SPEAKERS

CHONGWOO YU
Silver Spring, MD
(Clinical Pharmacology Expert)

JAEGIL KIM
GSK
(Clinical Bioinformatics)



SANG HYUN LEE
Prelude Therapeutics
(TPD/Proximity Induced Degradation)

TED HONG
AstraZeneca
(Non-Clinical Bioinformatics)

SEUNGKYU LEE
Bristol Myers Squibb
(Neurodegenerative Diseases and Neuroinflammation)

JUNYONG JO
Merck
(Analytical Research)

EUN MI HUR
Bristol Myers Squibb
(Translational Development/Immunology)

HANNA CHO
Biomea Fusion
(Global Regulatory Affairs)

CAREER DEVELOPMENT SESSION

11.03: FRIDAY 3:30-6PM 3:30-4pm | CV CLINIC + 4-6pm | JOB FAIR

REGISTRATION NOW OPEN!
EARLY BIRD REGISTRATION UNTIL OCTOBER 12TH

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KAIST

KASBP
Korean American Society in Biotech and Pharmaceuticals

대전광역시
DAEJEON METROPOLITAN CITY

충청북도
CHUNGCHEONGBUK-DO

We, Daejeon Metropolitan City, Chungcheongbuk-do and KAIST are supporting the following Bio companies in Korea to enter the US and Global markets

NeuroTobe, ACTNOVA
BIORCHESTRA, RevoSketch
CdmoGen, YOUTH BIO GLOBAL
Oldam

NeuroTobe PHARMACEUTTICALS

ACTNOVA

BIORCHESTRA

RevoSketch
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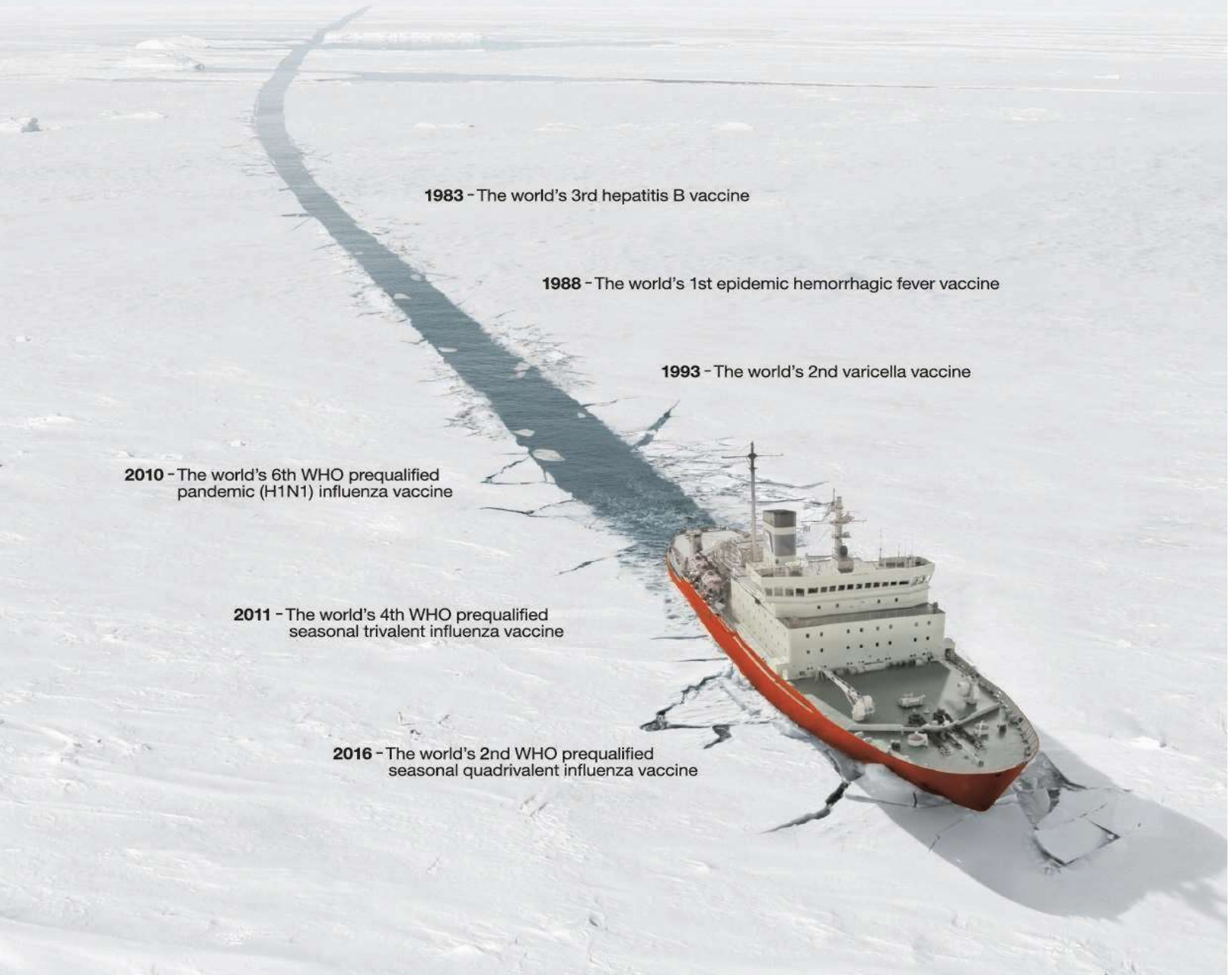
CdmoGen
Life Sciences

Y B G
YOUTH BIO GLOBAL

oldam

GC Biopharma to the world right now! We bring new hope to patients around the world



Since its establishment in 1967, GC Biopharma has consistently maintained a philosophy of taking the difficult but essential path, rather than the easier path. Now, GC Biopharma is going that extra mile by aiming to give new hope to people all around the world, not just those living in Korea. By combining its outstanding R&D capability for developing globally-recognzed vaccines and blood derivatives with its differentiated soloutions, GC Biopharma has set itself a new challenge to discover novel and much needed medicines and to become a trusted name, synonymous with protecting the health and happiness of people across the world.

A global leader in the healthcare industry - GC Biopharma Corporation

GC Biopharma

Invitation Letter

On behalf of the organizing committee, we welcome you to the 2023 KASBP Fall Symposium and we are pleased to have you here today.

As you all know, KASBP has grown over the years. We are confident to say that KASBP has evolved into a prestigious professional network of Korean pharmaceutical experts over the past two decades and established the KASBP symposium as a true hub for open innovation.

Korean American Society in Biotech and Pharmaceuticals (KASBP) is a premier nationwide professional organization whose members count over 2,500 professionals in biotechnology, pharmaceutical and academic institutions in both the United States and Korea. Founded in 2001 as a non-profit organization, our mission is to promote scientific exchange, collaboration and networking between research scientists, entrepreneurs, and students. KASBP holds two biannual symposiums, each in Spring and Fall, focusing on the cutting-edge sciences and emerging trends in drug discovery and development.

The 2023 KASBP Fall Symposium will focus on "Increasing the Probability of Success in Drug Discovery and Development" and invites prominent speakers from bio-pharma industry, regulatory agencies, and academia. We are very pleased to have an opportunity to host such distinguished speakers, as the whole community can have a chance to hear their live testimonials of the advances in drug development, on top of their excellent expertise and experience.

The symposium will open with a Daewoong Achievement Award ceremony. Lecture will be given by this year's awardee Dr. Holly Kimko, who is a top expert in the field of clinical pharmacology, especially in modeling and simulations. Then, a sponsor presentation session and networking session along with YG session will be followed. One of the greatest advantages of in-person meetings is networking. At the symposium, you will meet industry professionals as well as academic scientists and trainees.

The following day will begin with three scientific sessions and will be highlighted by KASBP Fellowship Awards, MOGAM-KASBP Scholarship Awards ceremony, and poster presentations by energetic junior scientists. Lecture will be given by this year's awardee Dr. Holly Kimko, who is a top expert in the field of quantitative systems toxicology modeling from microphysiological systems and organoids.

We are confident that the 2023 KASBP Fall Symposium offers a productive and memorable experience for each of you. In addition, I would like to express my most profound gratitude to the organizing committees, volunteers, and generous support from all sponsors for their dedication. I am looking forward to seeing you soon.

2023 KASBP Fall Symposium Organizing Committee

20th KASBP President	**Ik-Hyeon Paik | Wave Life Sciences**
Program Chair	**Dooyoung Lee | Morphic Therapeutic**

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Scholarship / Fellowship Committee

Title	Name	한글 이름	Affiliation
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	Young Don Kwak	곽영돈	Novartis
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KASBP Fellowship Committee	Sangwon Lee	이상원	Silver Spring, MD
	Heykyeong Jeong	정혜경	GSK

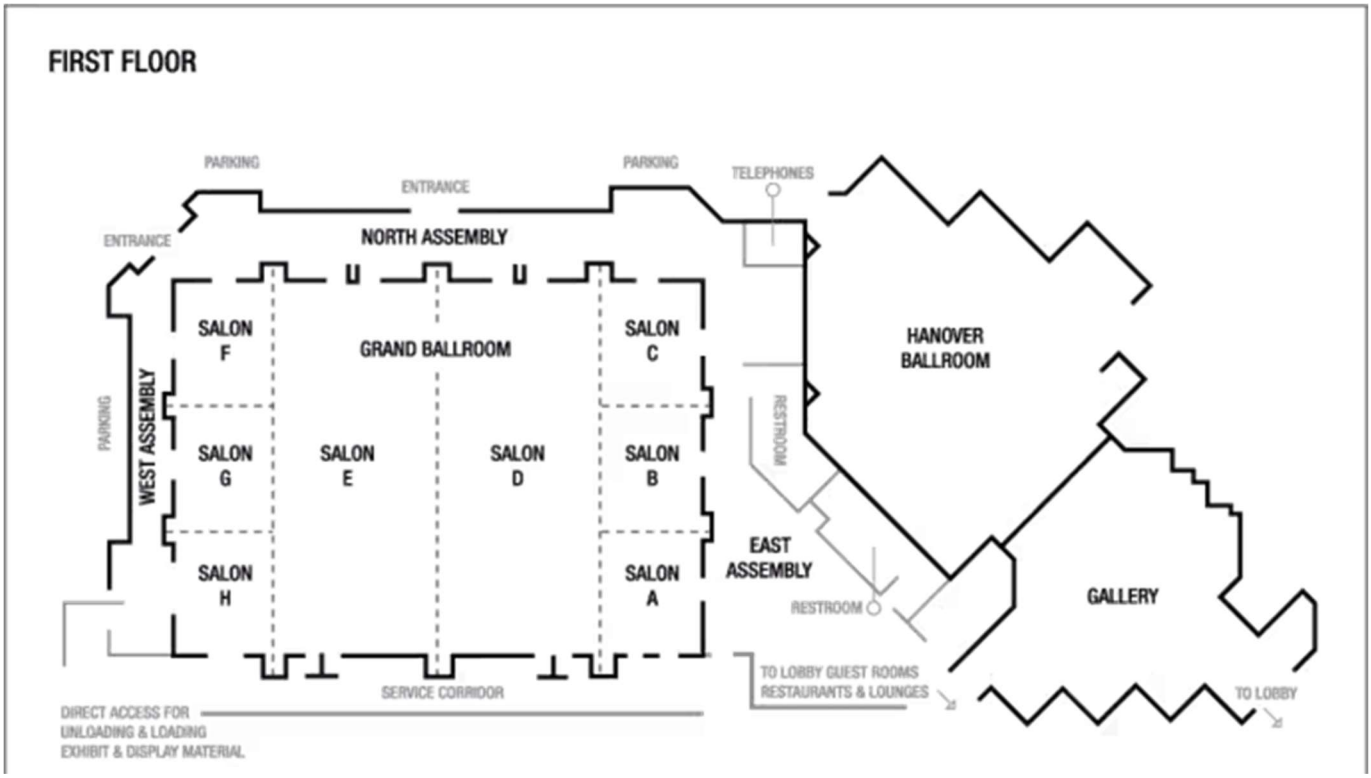
Symposium Schedule (US Eastern Time)

<table>
<tr><td rowspan="11">Nov. 3rd Fri.</td><td>3</td><td colspan="2">3:30 pm - 4:00 pm CV Clinic</td></tr>
<tr><td>4</td><td rowspan="2">4:00 pm - 6:00 pm
Registration & Networking</td><td rowspan="2">4:00 pm - 6:00 pm Job Fair</td></tr>
<tr><td>5</td></tr>
<tr><td>6</td><td colspan="2" rowspan="2">6:00 pm - 7:20 pm Opening, Congratulatory Remarks, and Dinner</td></tr>
<tr><td>7</td></tr>
<tr><td rowspan="3">8</td><td colspan="2">7:20 pm - 8:15 pm
KASBP-Daewoong Achievement Award Ceremony & Keynote Presentation</td></tr>
<tr><td colspan="2">8:15 pm - 8:30 pm Break</td></tr>
<tr><td>8:30 pm -10:00 pm
Sponsor Presentations I
• Daewoong Pharmaceutical (25 mins)
• Dong-A ST (25 mins)
• GC Biopharma (25 mins)
• ITP-Yonsei (15 mins)</td><td>8:30 pm -10:00 pm
YG (Young Generation) Program
Career Development & Workshop</td></tr>
<tr><td>9</td></tr>
<tr><td>10</td><td colspan="2" rowspan="2">10:00 pm - 11:30 pm Networking Session</td></tr>
<tr><td>11</td></tr>
</table>

Symposium Schedule (US Eastern Time) Cont'd.

Nov. 4th Sat.	7	7:00 am - 8:15 am Registration / Breakfast	9:00 am - 12:00 pm Onsite Interviews
	8	8:15 am - 09:45 am **Scientific Session A**	
	9	9:45 am - 10:00 am Coffee Break	
	10	10:00 am - 11:10 am **Sponsor Presentations II** ● KAIST-GCC (6 companies) (70 mins)	
	11	11:10 am -12:00 pm **KASBP Fellowship Awards and MOGAM-KASBP Scholarship Ceremony**	
	12	12:00 pm -12:15 pm Group Photo	
	1	12:15 pm – 2:00 pm Lunch, Poster Session, and Networking	
	2	2:00 pm - 2:30 pm **Sponsor Presentations III** ● JW Pharma (10 mins) ● Standigm (10 mins) ● CHA BIOGROUP (10 mins)	
	3	2:30 pm - 3:30 pm **Scientific Session B (KHIDI-KASBP Session)**	
		3:30 pm - 3:50 pm Coffee Break	
	4	3:50 pm - 5:20 pm **Scientific Session C**	
		5:30 pm – 7:00 pm Networking and Dinner (Registration required)	

Floor Plan



Main Events (Fri, Sat): **GRAND BALLROOM (SALON D & E)**

Poster Session (Sat): **NORTH ASSEMBLY & EAST ASSEMBLY**

YG session (Fri): **Hanover Ballroom**

CV Clinic / Career Fair: **Salon A - B**

Job interview / Company Private meeting room (Fri, Sat): **Salon F - H**

Staff room (Fri, Sat): **Salon C**

Booth location (Fri, Sat): **North Assembly**

Symposium Schedule (US Eastern Time)

November 3, 2023, Friday

CV Clinic 3:30 pm - 4:00 pm
Moderator: Hyun Jin Jung | Columbia University | KASBP YG Director
Speaker: Chongwoo Yu | Silver Spring, MD | Clinical Pharmacology

Registration and Networking 4:00 pm - 6:00 pm

Job Fair *(in parallel)* 4:00 pm - 6:00 pm
Moderators: Jooyoung Lee | Vertex Pharmaceuticals | Career Development Director
Hyungjin Yun | Rapigen America, Inc | Career Development Director

Opening, Congratulatory Remarks, and Dinner 6:00 pm - 7:20 pm
Moderator: Dooyoung Lee | Morphic Therapeutic | Symposium Program Chair & General Director

- **Opening Remark** Ik-Hyeon Paik | Wave Life Sciences | KASBP President
- **Congratulatory Remarks** Seungkook Park | Daewoong Pharmaceutical
  Jae Uk Jeong | GC Biopharma
  Mun-Kee Choi | KAIST GCC
  Eun-Ju Ryu | Dong-A America & Open Innovation Center
- **Dinner**

KASBP-Daewoong Achievement Award Ceremony and Keynote Lecture 7:20 pm - 8:15 pm
Moderator: Ik-Hyeon Paik | Wave Life Sciences | KASBP President

- **Use of Microphysiological Systems with Quantitative Systems Modeling for Drug Development Decisions**
  Holly KimKo | AstraZeneca

Break 08:15 pm - 8:30 pm

Sponsor Presentations I 8:30 pm - 10:00 pm
Moderator: Kern Chang | Lotte Biologics | KASBP General Director & Philadelphia Chapter President

- **Daewoong Pharmaceutical (25 mins)**
  Daewoong Pharmaceutical: Discovery and Development of Innovative Drugs
  Hyae Jung Hyun | Team Leader, Autoimmune Research Team

- **Dong-A ST (25 mins)**
  Growing Global
  Eun-Ju Ryu | COO, Dong-A America & Head of Dong-A ST Open Innovation Center

- **GC Biopharma (25 mins)**
  The journey to the future of the GC Biopharma R&D
  Heechun Kwak | Discovery 2 Team Leader

- **IPT-Yonsei (15 mins)**
  Open Innovation at Songdo:
  Case of Korea National Institute for Bioprocessing Research & Training (K-NIBRT)
  Gyoonhee Han | Director of K-NIBRT Education Centre, Yonsei University

YG (Young Generation) Program/Career Development Workshop *(in parallel)* 8:30 pm - 10:00 pm
Moderator: Hyun Jin Jung | Columbia University | KASBP YG Director

Speakers:

- Chongwoo Yu | Silver Spring, MD | Clinical Pharmacology
- Hanna Cho | Biomea Fusion | Global Regulatory Affairs
- Changhyun Seong | Regeneron | Therapeutic Proteins

Networking (11 Areas) 10:00 pm - 11:30 pm
Moderator: Sungyong Hwang | KASBP Member Networking Director & Washington DC Chapter President

- NW-01: Medicinal Chemistry / Drug Discovery & Delivery / Preclinical / Micro-Nanotechnology (Moderator: Ik-Hyeon Paik, Wave Life Sciences)
- NW-02: Immunology-Oncology / Autoimmune / Inflammatory Diseases (Moderator: Minjae Shin, Kaigene, Inc)
- NW-03: Metabolic Diseases / Cardiovascular / Diabetes / Respiratory Diseases (Moderator: Nicholas (Nae Gyune) Rim, Novartis)
- NW-04: Infectious Diseases / Vaccines / RNA Therapeutics (Moderator: Ji-Young Min, GSK)
- NW-05: Neurological Disorders / Alzheimer's Disease / Parkinson's Disease / Aging (Moderator: Seungkyu Lee, Bristol Myers Squibb)
- NW-06: Cell and Gene Therapy / Rare Diseases (Moderator: Jooyoung Lee, Vertex Pharmaceuticals)
- NW-07: Business Development / Venture Capital / Entrepreneurship / Legal / Consulting / Government Relations (Moderators: Jay Choi, Huons USA, Inc; Eunchan Park, GNT Pharma)
- NW-08: Digital Health / Bioinformatics / A.I. / Machine Learning / Quantitative Science (Moderator: Ted Hong, AstraZeneca)
- NW-09: CMC / Quality Assurance / Regulatory Affairs / Project Management (Moderator: Jaehyun Lim, TeraImmune/Baudax Bio)
- NW-10: Medical Device / In Vitro Diagnostics / Biomedical Engineering / Analytical Method Development (Moderator: Sangwon Lee)
- NW-11: Clinical Trial & Development / Clinical Pharmacology / Biostatistics (Moderator: Chongwoo Yu)

November 4, 2023, Saturday

On-site Interviews 9:00 am - 12:00 pm

Moderators: Jooyoung Lee | Vertex Pharmaceuticals | Career Development Director
Hyungjin Yun | Rapigen America, Inc | Career Development Director

Registration and Breakfast 7:00 am - 8:15 am

Scientific Session A 8:15 am - 09:45 am

Moderator: Seung-Joon Lee | Biogen | KASBP Boston Chapter President

A-1: How to Adapt to Evolving Healthcare Ecosystem: Strategies in Translational Medicine
Eun Mi Hur | Bristol Myers Squibb

A-2: Analytical Capability at Merck and Case Studies with Molecular Probes
Junyong Jo | Merck

A-3: Assessment of Neural Function in Preclinical Models of Neurodegenerative Disorders
Seungkyu Lee | Bristol Myers Squibb

Break 09:45 am -10:00 am

Sponsor Presentations II (KAIST-GCC) 10:00 am - 11:10 am

Moderator: Eunchan Park, Ph.D. | GNT Pharma | KASBP NJ/NY Chapter President

- **NeuroTobe (10 mins)**
  Neural circuit-based drug development for neurological disorders
  DaeSoo Kim, CEO

- **ACTNOVA (10 mins)**
  ACTNOVA - New AI SW for Automated Quantification of Behavior
  Daegun Kim, CEO

- **BIORCHESTRA (10 mins)**
  Brain targeting RNAi drug delivery for neurodegenerative diseases
  Ilsang Yoon, Senior Managing Director

- **RevoSketch (10 mins)**
  Most Advanced Digital PCR Technology to Detect Extremely Low Concentration of DNA/RNA
  SungWoon Lee, CEO

- **CdmoGen (10 mins)**
  AAV-based Drug Development and Specialized CGT CTDMO, CdmoGen
  Keerang Park, CEO

- **YOUTH BIO GLOBAL (10 mins)**
  Development of Innovative Allogenic Stem Cell Therapeutics and Wound Care products with fully natural ingredients.
  Seung Ho Yoo, CEO

KASBP Fellowship Awards and MOGAM Scholarship Ceremony 11:10 am - 12:00 pm

Moderators: Heykyeong Jeong | GSK | KASBP Fellowship Committee
In-Hyun Park | Yale University | MOGAM-KASBP Scholarship Director

- **KASBP Fellowship Awards**
  - KASBP-Daewoong Awardees
  - KASBP-Dong-A ST Awardees
  - KASBP-GC Biopharma Awardees
  - KASBP-KAIST GCC Awardee
  - KASBP-ITP Yonsei Awardee

- **MOGAM-KASBP Scholarship Awards**

Group Photo 12:00 pm - 12:15 pm

Moderator: Sungyong Hwang | KASBP General Director & Washington DC Chapter President

Lunch, Poster session and Networking 12:15 pm – 2:00 pm

Moderator: Heykyeong Jeong | GSK | KASBP Fellowship Committee

Sponsor Presentations III 2:00 pm - 2:30 pm

Moderator: Oh Kyu Yoon | Gilead Sciences | KASBP San Francisco Chapter President

- **JW Pharma (10 mins)**
  JW R&D Strategy
  Jinsuk Kang | Chief of Drug Discovery Center

- **Standigm (10 mins)**
  Cutting Edge AI Platform for Drug Discovery
  Daehee Han | Vice President of Strategic Alliances

- **CHA BIOGROUP (10 mins)**
  Advancement in Cell and Gene therapy - From R&D to Manufacturing
  Se Chang Kwon | Vice Chairman, R&D Commercialization Director CHA Group

Scientific Session B (KHIDI-KASBP Session) 2:30 pm - 3:30 pm

Moderator: Kyung Hyo Kim | AbbVie | KASBP Illinois Chapter President

B-1: The Importance of Clinical Pharmacology in Drug Development: From Dose Finding to Bioanalysis

Chongwoo Yu | Silver Spring, MD

B-2: The Role of Regulatory Affairs for Successful Drug Development

Hanna Cho | Biomea Fusion

Break 3:30 pm - 3:50 pm

Scientific Session C 3:50 pm - 5:20 pm

Moderator: Cheol K. Chung | Merck | KASBP Scientific Committee

C-1: Proximity-Induced Protein Degradation

Sang Hyun Lee | Prelude Therapeutics

C-2: Biomarker Discovery and Patient Stratification Guided by Cancer Genomics and Computational Biology

Jaegil Kim | GSK

C-3: Effective Data Science Practices in Drug Discovery

Ted (Chanyoung) Hong | AstraZeneca

Closing Remarks 5:20 pm - 5:30 pm

Ik-Hyeon Paik | Wave Life Sciences | KASBP President

Networking and Dinner (Registration required) 5:30 pm – 7:00 pm

2023 KASBP-Daewoong Achievement Award Lecture

Use of Microphysiological Systems with Quantitative Systems: Modeling for Drug Development Decisions

Holly Kimko
Global Head of Systems Medicine | Executive Director | AstraZeneca
Holly.Kimko@AstraZeneca.com

ABSTRACT. New ways of testing drug safety use lab experiments combined with mathematical models to increase clinical safety while reducing drug development costs. We have developed quantitative systems models in an iterative fashion based on preclinical and clinical investigation findings. Two cases will be presented: (1) our bone marrow microphysiological (MPS)-modeling framework is routinely applied to predict the clinical cytopenia risk associated with oncology compounds prior to clinical trials, and (2) a suite of multiscale models of the intestinal epithelium predicts the dynamics of drug-induced injury and its emergent diarrhea, based on both the drug mechanism of action and the toxicity measured in ex-vivo epithelial organoids. A comparative analysis of the observed and predicted clinical diarrhea incidence for several compounds has demonstrated that this modeling strategy leads to superior predictive performance when compared against in-vivo-based predictions. Integration of in-vitro advanced MPSs and math models enables the quantitative safety assessment of investigational drugs at the early stages of the development pipeline to support decision-making. **BIOSKETCH.** Dr. Holly Kimko leads the Systems Medicine group under Clinical Pharmacology & Safety Science at AstraZeneca. She earned her PhD in Pharmaceutical Sciences from the University at Buffalo in NY in 1995 with a BS in Pharmacy from Seoul National University (Feb 1986). Previously she worked at Georgetown University Medical School (7 years) and Johnson & Johnson (17 years). She is a FAPPS (Fellow of the American Association of Pharmaceutical Scientists). She implements quantitative systems pharmacology or toxicology modeling and pharmacometrics approaches to improve the probability of drug development success by facilitating study design decisions and analyzing study results for Go/NG decisions and regulatory filings. She has championed the use of clinical trial simulations for drug development and edited three books.

Scientific Session A

Eun Mi Hur
Bristol Myers Squibb
emhur315@gmail.com

How to Adapt to Evolving Healthcare Ecosystem: Strategies in Translational Medicine

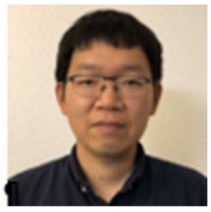
ABSTRACT. Drug development has been increasingly challenging in a rapidly evolving healthcare ecosystem. Fast adaptation to external innovation, highly regulated process and changing healthcare policies is critical to accelerate drug discovery, clinical trials and improve R&D productivity. Translational medicine approaches with adoption of new technologies enable future success in drug development. Key strategies of translational medicine include patient stratification based on multi-omics profiling, improved clinical study using digital biomarkers and wearables and application of artificial intelligence.

BIOSKETCH. Eun Mi Hur is Scientific Associate Director, Translational Early Program Lead in Immunology, Cardiovascular Disease Thematic Research Center at Bristol Myers Squibb. She is leading translational strategy, clinical biomarker development in clinical studies in immunology and early-stage immunology programs from internal and external partnership. She graduated with BS and MS from Seoul National University, South Korea; received her PhD in Immunology from Stanford University School of Medicine, CA; served as post-doctoral research fellow at California Institute of Technology (Caltech), CA.

Junyong Jo
Merck & Co., Inc.,
junyong.jo@merck.com

Analytical Capability at Merck and Case Studies with Molecular Probes

ABSTRACT. Merck Analytical Research and Development (ARD) is a single large organization that supports from discovery to marketing registration, and covers all modalities such as small molecule drug, biologics, vaccines, and cell therapy. As both scientific data driven decision and the speed of such data generation are equally important to deliver best drug product to patients, ARD continuously increases analytical capability and efficiency across all modalities. In this presentation, I am going to briefly introduce analytical capability of ARD that increases the speed of early discovery program development as well as commercial process development toward the best science in the first filing. Also, I will share a case study where I developed a high-throughput analytical tools that assay residual level of palladium. In the second case study, recent development of nitrite ion assay method that is a part of nitrosamine risk assessment will be discussed. **BIOSKETCH. Expertise:** Project Analytical lead of many drug substances with extensive experience of regulatory filing and analytical technics **Education:** Ph.D. in Inorganic Chemistry, Indiana University Bloomington; BS/MS in Chemistry, Korea University. **Experience Summary:** Dr. Jo is a Principal Scientist in Analytical Research and Development at Merck & Co., Inc. He has over 10 years of experience as an analytical lead for many investigational new drugs and marketed drugs including sitagliptin, zepatier, zerbaxa, and islatravir. He has been also actively developing probe technologies that can detect residual level of analyte such as palladium, cyanide, copper, and nitrite to support process development of drug products.



Seungkyu Lee
Bristol Myers Squibb
skleee0125@gmail.com

Assessment of neural function in preclinical models of neurodegenerative disorders

ABSTRACT. Neuroinflammation, protein aggregation, and neuronal death are symptoms of neurodegenerative disorders. These have an impact on neural functions such as intrinsic excitability and synaptic activity. To develop new therapeutics and monitor the progress of diseases, it is essential to accurately characterize neural functions in vitro and in vivo. In this talk, I will discuss the concept and measuring techniques of neural activity, as well as current efforts to use neural activity as translational biomarkers in preclinical research and development. **BIOSKETCH.** Seungkyu Lee is a principal scientist in Neuroscience Thematic Research Center at Bristol Myers Squibb (BMS). He joined

Celgene/BMS in 2019 after his postdoctoral training at Boston Children's Hospital where his research focused on target identification of amyotrophic lateral sclerosis and compound screening to treat neurogenic inflammation. He earned a PhD in biochemistry from Gwangju Institute of Science and Technology. He is currently researching on pharmacodynamic biomarkers and target engagement for the preclinical development of CNS drugs.

Scientific Session B | KHIDI-KASBP Session

Chongwoo Yu
Silver Spring, MD
chongwooyu@hotmail.com

The Importance of Clinical Pharmacology in Drug Development: From Dose Finding to Bioanalysis

ABSTRACT. Clinical Pharmacology is a study of drugs in humans, which is underpinned by the basic science of pharmacology, with added focus on the application of pharmacological principles and methods in the real world. Clinical Pharmacology focuses on the impact of intrinsic and extrinsic factors on inter-patient and intra-subject variability in drug exposure and response. This translational science contributes to the understanding of the benefit-risk profile in individual patients and the development of relevant therapeutic monitoring and management strategies. Our goal is to deliver the right drug at the right dose and time to the right patient. Clinical Pharmacology plays an important role in drug development, especially in determining the optimal dosage regimen including individualization. This involves the evaluation of the drug's pharmacokinetics and pharmacodynamics, food effect, drug interaction potential, exposure-response relationship for safety and efficacy, and considerations when being used in specific populations. In addition, the importance of bioanalysis that generates the data for Clinical Pharmacology evaluations cannot be overemphasized. Case examples will be presented to highlight the importance of Clinical Pharmacology in drug development in ensuring that drug products are safe and effective. **BIOSKETCH.** Dr. Chongwoo Yu is a Clinical Pharmacology expert working in Silver Spring, MD. Dr. Yu earned his BS in Chemistry and MS in Physical Organic Chemistry, both at Hanyang University in Korea. Dr. Yu received his PhD in Analytical Chemistry with the focus on Drug Metabolism and Mass Spectrometry from the University of Illinois Chicago. Subsequently, Dr. Yu has worked in the Department of Pharmacokinetics, Dynamics, and Metabolism (PDM) at Pfizer (Ann Arbor, MI) and the Drug Metabolism and Pharmacokinetics (DMPK) Department at Schering-Plough (currently, Merck; Kenilworth, NJ) for several years. At both organizations, Dr. Yu has been heavily involved in carrying out various types of drug metabolism, pharmacokinetics, and drug-drug interaction studies using mass spectrometry. Since 2007, Dr. Yu's work has been focused on leveraging Clinical Pharmacology in drug development. His expertise includes drug metabolism, pharmacokinetics, drug-drug interactions, bioanalysis, and clinical study design.

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The Role of Regulatory Affairs for Successful Drug Development

ABSTRACT. Regulatory affairs plays a major role in drug development from the start of clinical trials to the market entry. **BIOSKETCH.** Hanna Cho, PhD, RAC currently works at Biomea Fusion, Inc as a head of global regulatory affairs. Prior to joining Biomea, Dr. Cho worked as a global regulatory lead at various biopharma companies including BioMarin, Iovance, Clovis Oncology, and Genentech. She successfully led cross functional global teams for various products including approvals of vosoritide (first and only therapy for achondroplasia, the most common form of dwarfism) and rucaparib (for ovarian cancer with germline and somatic BRCA mutations diagnosed by a companion diagnostic). Dr. Cho has diverse experiences in various functions of regulatory affairs including clinical/nonclinical, CMC, labeling, and international regulatory. Also, her regulatory strategy experience extends from pre-clinical to post-market life cycle management. Prior to switching her career to regulatory affairs, Dr. Cho was a medicinal chemist at Plexxikon (acquired by Daiichi Sankyo) and Pharmacia (acquired by Pfizer). As a medicinal chemist, Dr.

Cho designed and synthesized the active moiety of vemurafenib (the first personalized/precision medicine targeting melanoma) that is globally marketed as Zelboraf®, and it is considered as the first drug designed using fragment-based lead discovery to be approved and marketed. Dr. Cho earned her Ph.D. in medicinal/organic chemistry from the University of Illinois at Chicago.

Scientific Session C

Sang Hyun Lee
Prelude Therapeutics
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Proximity-induced protein degradation: Bench to Bedside

ABSTRACT. Targeted protein degradation (TPD) is an innovative approach in the field of therapeutics. It allows for the targeted removal of disease-causing proteins, leading to more precise and effective treatment. TPD is particularly promising for undruggable proteins which were previously considered difficult to target with traditional therapeutic modalities. The presentation will focus on the advantages of TPD and highlight recent clinical developments in this field. **BIOSKETCH.** I currently hold the position of Vice President at Prelude Therapeutics. I lead the early discovery group responsible for advancing cancer drug development from the initial stages to clinical trials. Before joining Prelude, I served as the Head of Oncology and successfully led multiple oncology programs at Arvians, a pioneering company in the field of PROTAC. From 2011 to 2018, I played a pivotal role at Incyte Corporation, serving as the Project Lead for oncology programs. I completed post-doctoral training and served as a staff scientist at the Dana-Farber/Harvard Cancer Center, further enhancing my expertise in cancer research. I earned Ph.D. in Molecular and Cell Biology from the University of Texas at Dallas in 2000.

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GSK
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Biomarker discovery and patient stratification guided by cancer genomics and computational biology

ABSTRACT. With the development of next-generation sequencing technology and the comprehensive genomic profiling of cancer driver events, predictive and diagnostic biomarkers in oncology play an increasingly important role in the drug development and its successful translation to the clinical program. In this presentation, we will highlight some representative examples of cancer biomarker development targeting DNA damage response and address how those biomarkers can increase the probability of success in clinical programs via patient stratification and CDx development. **BIOSKETCH.** Jaegil Kim received a PhD from KAIST (theoretical chemistry) in Korea and worked at Broad Institute as a senior computational scientist before joining GSK in 2019. Currently he is working as Advanced Analytics Director in Experimental Medicine of GSK oncology and has been supporting biomarker discovery efforts of several clinical programs.

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Effective Data Science Practices in Drug Discovery

ABSTRACT. Data Science, the discipline harnessing data's power for insights and decision-making, spans diverse fields from data engineering to machine learning. While AI advances, it's not a universal Data Science solution; a holistic approach blending human expertise and AI is vital. Effective Data Science begins by asking precise questions, guiding data exploration for actionable insights. This presentation spotlights a few published data science examples illustrating its role in addressing crucial questions that demonstrated Data Science's potential in drug discovery. In conclusion, it prompts readers to consider: "What questions do you have for Data Science in the context of drug discovery?" Emphasizing inquiry's pivotal role in driving innovation in pharmaceutical research, this presentation offers a

comprehensive view of Data Science's multifaceted nature, its domain significance in drug discovery, and the synergy between human expertise and AI in advancing pharmaceutical solutions. **BIOSKETCH.** Ted Hong is an Associate Director, in the department of Early Data Science at AstraZeneca. His role focuses data science and bioinformatics analysis in the early-stage oncology drug discovery including Epigenetics research. He also teaches data analysis course in his company. He holds a Bachelor's and Master's degree in Applied Biology and Chemistry from Seoul National University, and a Ph.D. in Systems Biology and Physiology from the University of Cincinnati, during which he made substantial contributions as the first author to publications in renowned journals, including Cell and Genome Research. Before pursuing his Ph.D., Dr. Hong gained valuable industry experience as an Associate Senior Researcher in the Bioresearch Team at LG Household & Healthcare Ltd., before coming to the United States. His expertise lies in bioinformatics, epigenetics, and gene regulations.

Sponsor Presentations II

KAIST-GCC

Company	대표	Technology (Product)	Home Page	설립
NeuroTobe	김대수	운동 질환 및 난치성 뇌질환 치료제 개발	https://neurotobe.com/	2022
ACTNOVA	김대건	AI 기반 임상·비임상 행동 시험 분석	https://actnova.io/	2019
BIORCHESTRA	류진협	퇴행성 뇌질환 및 중추신경계 희귀질환 치료제	https://biorchestra.com/	2016
RevoSketch	이성운	디지털 PCR 개발	https://revosketch.com/	2017
CdmoGen	박기랑	황반변성 유전자치료 신약 후보물질 개발	http://www.cdmogen.com	2015
YOUTH BIO GLOBAL	유승호	세포치료제, 세포배양액, 창상피복재	Not available	2017
Oldam	최병진	유색 불투명한 종(Bell)의 의료용 착색제가 포함된 생리컵	http://www.oldam.kr/main	2018

Job Fair Announcement

2023 Fall Symposium Job Fair offers members a unique opportunity to explore career prospects with industry-leading companies, engage in meaningful discussions with recruiters, and gain valuable insights. Veterans, career changers, and all jobseekers are welcome to attend!

KASBP Job Fair offer the unique advantage of networking and conducting interviews with multiple potential employers. It will also serve as a valuable avenue to connect with employers and glean insights into available positions. Engage with numerous hiring managers representing esteemed companies.

- **Date/Time:** November 3rd, 2023 Friday (4PM - 6PM)
- **Location**: Room to be announced.
- **Format**: Company introductions followed by visiting booths and networking.
- **Preparation**: ensure your resume/CV is current and bring an ample supply of copies as well as your business cards to the job fair.
- **Participating Companies**:
    - GC Biopharma
    - Dong-A ST USA
    - JW Pharma
    - Samsung Biologics
    - Matica Biotechnology
    - IVIM Technology
    - VORONOI

  *Click each company hyperlinked for further information and please stay tuned for updates.

- Raffle Drawing: Job Fair attendees will be eligible for random raffle drawings offering opportunities to win Starbucks gift cards or jackpot prizes, such as Apple Watch, Nespresso coffee machine, JBL bluetooth speaker, and more!

- Questions? Please email jobfair@kasbp.org if you have any questions.

KASBP 2023 FALL SYMPOSIUM

YG PANEL SESSION + NETWORKING EVENT

CAREER DEVELOPMENT

CHONGWOO YU
Silver Spring, MD
(Clinical Pharmacology)

HANNA CHO
Biomea Fusion
(Global Regulatory Affairs)

CHANGHYUN SEONG
Regeneron
(Therapeutic Proteins)

OTHER CAREER DEVELOPMENT PROGRAMS:
CV CLINIC + JOB FAIR 3:30-6PM

11.03 Friday | 8:30-10pm

HANOVER MARRIOTT : 1401 NJ-10 E, Whippany, NJ 07981

Poster Session

2023 KASBP Fall Fellowship Awardees

Award Name	Awardee	Affiliation
KASBP-Daewoong	Yoon-Ho Hwang	University of Pennsylvania
KASBP-KAIST/GCC	Hong-Gyun Lee	Harvard University
KASBP-ITP Yonsei	Chiho Kim	Columbia University
KASBP-GC Biopharma	Sang-Hun Kim	Yale University
KASBP-Dong-A ST	Yun Ha Hur	The Rockefeller University
KASBP-Daewoong	Ukhyun Jo	National Cancer Institute
KASBP-GC Biopharma	Jong-Duk Park	Princeton University
KASBP-Dong-A ST	Heejin Jo	Johns Hopkins University

MOGAM-KASBP Scholarship Awardees

Awardee	Affiliation
Saejeong Park	Yale University
Inyoung Jun	University of Florida
Jinyeop Song	Massachusetts Institute of Technology
Hyeonglim (Stella) Seo	UCSD
Songmi Lee	University of Texas
So Yeon Ahn	Columbia University
Jinhyeong Bae	Indiana University
Jeong Hyo Lee	University of Wisconsin-Madison
Dasom Kim	Cornell University
Andrew (Ho-Young) Chung	Cornell University

2023 KASBP Fall Poster Presenters

Number	Presenter	Affiliation
P1	Yoon-Ho Hwang	University of Pennsylvania
P2	Hong-Gyun Lee	Harvard University
P3	Chiho Kim	Columbia University
P4	Sang-Hun Kim	Yale University
P5	Yun Ha Hur	The Rockefeller University
P6	Ukhyun Jo	National Cancer Institute
P7	Jong-Duk Park	Princeton University
P8	Heejin Jo	Johns Hopkins University
P9	Tae-Yoon Park	Harvard University
P10	Jin Gyu Cheong	Cornell University
P11	Inyoung Jun	University of Florida
P12	Jinyeop Song	Massachusetts Institute of Technology
P13	Hyeonglim (Stella) Seo	University of California San Diego
P14	So Yeon Ahn	Columbia University
P15	Jinhyeong Bae	Indiana University
P16	Jeong Hyo Lee	University of Wisconsin-Madison
P17	Dasom Kim	Cornell University
P18	Sang-Hun Choi	Yale University

2023 KASBP Fall Company Poster Presenters

Number	Presenter	Affiliation
P19	Daesoo Kim	NeuroTobe
P20	Daegun Kim	ACTNOVA
P21	Ilsang Yoon	BIORCHESTRA
P22	SungWoon Lee	RevoSketch
P23	Keerang Park	CdmoGen
P24	Seung Ho Yoo	YOUTH BIO GLOBAL
P25	Migak Hwang	Oldam
P26	Grace Lee	MATICA BIOTECHNOLOGY
P27	Seungyeop Baek	Incheon Technopark
P28	Seojean Lee	JW Pharma
P29	Sang Eun Jee	XtalPi, Inc
P30	Hyun Seok Kim	IVIM Technology

Poster Abstract

P-1: Fouling Resistant Microfluidic Mixing Device for High-precision and Robust Production of mRNA Lipid Nanoparticles

Yoon-Ho Hwang, University of Pennsylvania

Lipid nanoparticles (LNPs) are in the spotlight as delivery systems for mRNA therapeutics and have been used in the Pfizer/BioNTech and Moderna COVID-19 vaccines. However, traditional bulk mixing approaches often result in inefficient and non-uniform mixing, causing poor encapsulation efficiency and production quality. As an alternative approach, microfluidic technology can enable precision synthesis of mRNA-LNP by enabling rapid mixing and precise control of fluid flows not achievable using conventional batch processes. Moreover, the parallelization of microfluidic mixing units facilitates seamless scale-up, and simultaneously make it possible to use the same mixing unit through different phases of drug discovery and manufacturing. Despite these advantages, a major challenge in using microfluidic mixing units for LNP productions suffers from fouling and clogging of channel during rapid mixing and nanoprecipitation of LNPs, severely reducing the robustness in the operation of these devices. In this study, we test various strategies that have been used for antifouling coatings for suppressing performance degradation of chaotic herringbone mixing units. We present an antifouling resistant GMP compatible manufacturing platform, which enables high-precision (size < 100 nm, encapsulation efficiency > 90%) and robust production (t > 3 h) of mRNA-LNP. Furthermore, we demonstrate the in-vitro/in-vivo biological activity of mRNA-LNPs produced using the new coating strategy. Therefore, we envision that the fouling resistant microfluidic device demonstrated in this work will open up the possibility of creating a new class of manufacturing platform for the drug discovery as well as the various drug delivery carriers such as vesicles, liposomes, LNP, polymer NPs, and inorganic NPs.

P-2: Droplet-based forward genetic screening of astrocyte-microglia cross-talk

Hong-Gyun Lee, Brigham Women's Hospital at Harvard University

Cell–cell interactions in the central nervous system play important roles in neurologic diseases. However, little is known about the specific molecular pathways involved, and methods for their systematic identification are limited. Here, we developed a forward genetic screening platform that combines CRISPR-Cas9 perturbations, cell coculture in picoliter droplets, and microfluidic-based fluorescence-activated droplet sorting to identify mechanisms of cell–cell communication. We used SPEAC-seq (systematic perturbation of encapsulated associated cells followed by sequencing), in combination with in vivo genetic perturbations, to identify microglia-produced amphiregulin as a suppressor of disease-promoting astrocyte responses in multiple sclerosis preclinical models and clinical samples. Thus, SPEAC-seq enables the high-throughput systematic identification of cell–cell communication mechanisms and their potential value as therapeutic targets for neurologic diseases. Furthermore, SPEAC-seq provide unique opportunities to interrogate the connectome of astrocytes and other cells of interest, even outside the CNS, and its pathologic perturbations.

One sentence summary: SPEACC-seq is a high-throughput platform for the identification of cell-cell interaction mechanisms in forward genetic screens, which uncovers and highlights the potential value of astrocyte-microglia interaction pathways as therapeutic targets for neurologic diseases.

P-3: Overcoming PARP1 inhibitor resistance for BRCA-mutated cancers by targeting a novel PARP1 trapping pathway: Druggability of RNF114-dependent mechanism and its inhibitor, the nature product nimbolide

Chiho Kim, Columbia University

The development of PARP1 inhibitors (PARPi) has brought about a significant shift in the treatment of human malignancies with BRCA mutations. However, the response to PARPi therapy often varies, and both intrinsic and

acquired resistance to PARPi are commonly observed in clinical settings. There is a pressing need to gain a deeper understanding of the mechanisms underlying PARPi and to devise innovative strategies based on synthetic lethality to achieve a more comprehensive and durable therapeutic response in BRCA-mutated cancers. Recent research has highlighted PARP1 trapping as a critical factor influencing the anticancer effects of PARPi. To delve into the molecular intricacies of PARP1 trapping, we conducted an unbiased quantitative proteomic screen by mass spectrometry experiments. In doing so, we identified RING finger protein 114 (RNF114) as a PARylation-dependent E3 ubiquitin ligase intricately involved in the DNA damage response. Upon detecting DNA damage, RNF114 was recruited to DNA lesions in a PAR-dependent manner, where it orchestrated the degradation of PARylated-PARP1. Blocking this pathway disrupted the removal of PARP1 (PARylated) from the DNA damage site, resulting in significant PARP1 trapping. One remarkable aspect of the RNF114-PARP1 pathway is its translational potential. We demonstrated that nimbolide, a natural product, targeted RNF114, preventing the degradation and removal of PARP1 from DNA lesions. In contrast to conventional PARPi, which trap PARP1 by inhibiting its catalytic activity, nimbolide treatment induced the trapping of both PARP1 and PARylation-dependent DNA repair factors (e.g., XRCC1). This approach led to synthetic lethality concerning BRCA mutations and effectively overcame intrinsic and acquired resistance to PARPi, primarily through a dominant negative effect. Furthermore, we found that nimbolide treatment synergized with other DNA-damaging agents (e.g., ATRi and CHKi), activated the innate immune response (e.g., cGAS-STING pathway), and upregulated PD-L1 expression. Finally, our structure-activity relationship (SAR) study, which included a convergent synthesis of nimbolide using a pharmacophore-directed late-stage coupling strategy, unveiled several analogs exhibiting enhanced cytotoxicity against BRCA-mutated cancer cells. This suggests the possibility of developing improved nimbolide analogs for potential clinical use. In conclusion, our findings open up exciting prospects for targeting the druggable RNF114-dependent mechanism and its inhibitor, the natural product nimbolide, along with its analogs, to enhance the treatment of BRCA-mutated cancers.

P-4: The senolytic drug ABT-263 suppresses pulmonary fibrosis development by regulating MAVS signaling

Sang-Hun Kim, Yale University

Idiopathic pulmonary fibrosis (IPF) is defined as a specific form of chronic, progressive fibrosing interstitial pneumonia of unknown etiology, and patients with IPF typically die of respiratory failure within 2 to 5 years after diagnosis. The incidence of IPF increases with age, and accumulating evidence strongly suggests that aging is an important contributing factor to the onset and progression of IPF. To address these pressing issues, it is essential to promote a more profound understanding of pathogenesis, paving the way for the development of innovative therapeutic strategies. Mitochondrial antiviral signaling protein (MAVS) represents such an example and functions as a platform molecule to mediate mitochondrial innate immune signaling. However, the role of MAVS in contributing to the pathogenesis of IPF, in which dysregulated tissue damage responses play an important role, has not yet been confirmed. Additionally, whether MAVS signaling can be modulated by currently existing drugs to provide new therapeutic strategies has not been explored. Here, using an established model of pulmonary fibrosis, we demonstrate that MAVS plays as a critical mediator of multiple DAMPs signaling pathways and the consequent lung fibrosis after bleomycin-induced injury in vivo. In addition, multimeric MAVS aggregation, a key event of MAVS signaling activation, was significantly increased in bleomycin-injured lung and IPF lung. The application of ABT-263, known for its senolytic properties, led to a notable reduction in bleomycin-induced cellular senescence in vitro and in vivo. Intriguingly, ABT-263 also mitigated the expression of MAVS and its associated signaling pathways, subsequently impeding the progression of experimental pulmonary fibrosis. In contrast, the therapeutic effects of Pirfenidone or Nintedanib, two approved drugs for IPF treatment, were not related to the modulation of MAVS or its signaling. In summary, our findings suggest that MAVS has a pivotal role in the pathogenesis of pulmonary fibrosis, underscoring the potential significance of targeting MAVS using

senolytic drug as an innovative therapeutic approach for addressing IPF, a substantial unmet medical challenge. However, these findings may have certain limitations. To definitively evaluate ABT-263's potential as a treatment for age-related pulmonary fibrosis, comprehensive investigations, encompassing large-scale rodent studies and clinical trials, are imperative. Furthermore, it's of paramount importance to conduct further research on the safety and efficacy of ABT-263 in IPF patients before considering its clinical application. Rigorous monitoring of non-serious side effects and potential treatment-related symptoms during and after ABT-263 administration is warranted. Additionally, delving into the mechanisms that either directly or indirectly reduce the expression of MAVS requires additional in-depth investigation.

P-5: A tissue injury sensing and repair pathway that is independent of, but parallel to, the host-pathogen defense mechanism

Yun Ha Hur, The Rockefeller University

During the early stages of my postdoctoral training, my research was dedicated to unraveling the intricate mechanisms by which innate immunity senses tissue injury and facilitates the repair processes. Both pathogen infection and tissue damage represent universal insults that disrupt the delicate balance of homeostasis within the body. While it has been extensively documented that innate immunity responds to microbial infections by prompting the release of cytokines and chemokines, thereby activating an array of protective mechanisms, my endeavor was to explore whether such innate immunity might similarly contribute to tissue repair processes. In this pursuit, my investigations revealed that interleukin-24 (IL-24) is predominantly induced by barrier epithelial progenitors in response to tissue injury, independent of the microbiome or adaptive immunity. Remarkably, through unbiased phylogenetic approaches, we uncovered significant sequence and structural similarities between IL-24 and its receptors, and interferons and their receptors. Interferons play a crucial role in innate immunity-mediated pathogen defense. This resemblance suggests a shared ancestral origin, intriguingly suggesting that these pathways may have diverged from a common ancestor during evolution to adapt to the growing diversity of pathogens and injuries. Digging deeper into the role of IL-24 during tissue injury, notably, Il24 ablation in mice not only hindered epidermal proliferation and re-epithelialization, but also impeded capillary and fibroblast regeneration within the dermal wound bed. Conversely, ectopic Il24 induction in the homeostatic epidermis was found to initiate global epithelial-mesenchymal tissue repair responses, reinforcing the essential role of injury-induced IL-24. Mechanistically, we discovered that Il24 expression depends upon both (1) epithelial IL-24-receptor/STAT3 signaling and (2) the stabilization of HIF1α under hypoxic conditions resulting from damaged blood capillaries during tissue injury. These two pathways converge following injury, triggering autocrine and paracrine signaling involving IL-24-mediated receptor activation and metabolic regulation. Collectively, our findings underscore a parallel between the innate immune system's recognition of pathogens to combat infections, and the ability of epithelial stem cells to sense injury signals and orchestrate IL-24-mediate tissue repair. These insights hold promise for understanding complex infectious and inflammatory disease, which are often followed by secondary tissue damage, where proper repair is critical for disease tolerance and host survival. Taken together, these discoveries have broader implications for various conditions involving tissue damage. Based on this finding, my future study will seek to broaden our understanding of the role played by IL-24 or similar innate immune sensing mechanisms in responding to various forms of epithelial injury, particularly within the context of cancer. Cancer is often referred to as a wound that never heals. The initiation of tumorigenesis occurs when long-lived tissue-resident stem cells, such as epithelial stem cells, accumulate oncogenic mutations. These mutations disrupt the homeostatic balance and shift it towards uncontrolled proliferation, leading to the formation of tumor-initiating cells, namely cancer stem cells. It is intriguing to note that cancer stem cells share significant similarities in transcriptomes and chromatin accessibility with their counterparts in tissue stem cells during the wound healing process. However, the precise signals derived from the tissue microenvironment that cause cancer stem cells to exploit these cellular programs to undergo irreversible

changes remain poorly understood. Therefore, I anticipate that my future research will expand our comprehension of the complexity of epithelial injury, potentially paving the way for effective interventions in tumorigenesis.

P-6: The novel ATR inhibitor M1774 induces replication protein overexpression and broad synergy with DNA-targeted anticancer drugs

Ukhyun Jo, National Cancer Institute

Ataxia Telangiectasia and Rad3-related (ATR) inhibitors have shown significant preclinical promise. Here we explored the underlying molecular pharmacology and therapeutic combination strategies of the oral ATR checkpoint kinase inhibitor M1774 with DNA damaging agents (DDAs). As single agent, M1774 suppressed cancer cell viability at nanomolar concentrations, showing greater cytotoxicity than ceralasertib and berzosertib, but less than gartisertib and elimusertib in the small-cell lung cancer H146, H82, and DMS114 cell lines. M1774 also efficiently blocked the activation of the ATR-CHK1 checkpoint pathway caused by replication stress in the presence of TOP1 inhibitors. Non-toxic dose of M1774 enhanced TOP1 inhibitor-induced cancer cell death by enabling unscheduled replication upon replicative damage, thereby increasing genome instability. Tandem mass tag (TMT)-based quantitative proteomics uncovered that M1774, in the presence of DDA, forces the expression of proteins activating replication (CDC45) and G2/M-progression (PLK1 and CCNB1). In particular, the fork protection complex proteins (TIMELESS and TIPIN) were enriched, consistent with the unscheduled replication induced by M1774. M1774 is highly synergistic with a broad spectrum of clinical DDAs including TOP1 inhibitors (SN-38/irinotecan, topotecan, exatecan, and exatecan), the TOP2 inhibitor etoposide, cisplatin, the RNA polymerase II inhibitor lurbinectedin, and the PARP inhibitor talazoparib in various models including cancer cell lines, patient-derived organoids, and mouse xenograft models. Furthermore, we demonstrate that M1774 reverses chemoresistance to anticancer DDAs in cancer cells lacking SLFN11 expression, suggesting that SLFN11 can be utilized for patient selection in upcoming clinical trials.

P-7: Structural Elucidation of Cryptic Algaecides in Marine Algal-Bacterial Symbioses by NMR Spectroscopy and Cryo-EM/MicroED

Jong-Duk Park, Princeton University

Microbial secondary metabolite discovery is often conducted in pure monocultures. In a natural setting, however, where metabolites are constantly exchanged, biosynthetic precursors are likely provided by symbionts or hosts. In this work, we introduce eight novel and architecturally unusual secondary metabolites synthesized by the bacterial symbiont Phaeobacter inhibens from precursors that, in a native context, would be provided by their algal hosts. Three of these are produced at low titres and their structures are determined de novo using the emerging microcrystal electron diffraction method on cryo-electron microscope. Some of the new metabolites exhibit potent algaecidal activity suggesting that the bacterial symbiont can convert algal precursors, tryptophan and sinapic acid, into complex cytotoxins. These results have important implications for the parasitic phase of algal-bacterial symbiotic interactions. Through our research, we illuminated several critical aspects of natural product discovery. First, leveraging symbiotic relationships emerges as a promising approach for identifying new small molecules integral to symbiotic systems. This strategy can be expanded to broader contexts like mammalian-microbiome and plant-microbiome interactions. Secondly, the application of novel structural elucidation techniques allows us to enhance the findings even from minute quantities of samples. Furthermore, our work underscores the immense potential of natural products as reservoirs for novel drug candidates, exemplified by the discovery of molecules with pronounced anti-algal properties, hinting at their potential as marketable algacidal agents.Looking ahead, my research focus is shifting towards the symbiotic interactions between humans and their microbiomes. Specifically, I am examining secondary metabolites produced by gut microbiota linked to conditions like Crohn's disease and IBD. The aim is to pinpoint metabolites that either trigger

or influence these diseases. Employing the Cryo-EM/MicroED method will expedite structural elucidation, while biological assays such as human cytokine, cytotoxicity, and mouse model studies will elucidate the physiological impacts of our discoveries.

P-8: Creation of a single-cell transcriptomic database leveraging high-performance computing systems to enhance the probability of success in drug development.

Heejin Jo, Johns Hopkins University & CHA University

The utilization of RNA (Transcriptome) data is becoming increasingly important in the scientific pursuit of personalized medicine. In particular, the analysis and application of the multidimensionality of the transcriptome demand extremely high computing power, such as the utilization of GPT and Quantum computing. This necessitates both the generation of high quality of data and the development of cloud- based systems coupled with machine learning (ML)-based software to support it. To this end, as a part of Korea-US international collaborative technology development projects, we have aimed to build a single- cell-based transcriptomic database with a robust and scalable clouding architecture to identify and enhance the accuracy of drug target, and subsequently increase the probability of success. In the context of this project, our team's role is to generate single-cell transcriptome data using animal models from Alzheimer's disease (AD) and dementia with Parkinson's disease (PDD) using PIP-seq technology as well as to optimizing a library system for effectively storing and retrieving information. Data is predominantly generated from over eight brain regions associated with the diseases and specific areas within the gut to open the complexity over gut-brain axis. Therefore, in this upcoming meeting, we will present an overview of the progress made so far with the data and system, as well as our upcoming plans. Additionally, the foundational research findings regarding the impact of COVID-19 on age-related diseases such as PD and PDD will be shared and discussed. Alzheimer's Disease (AD) and dementia associated with Parkinson's Disease (PD-Dementia; PDD) are prevalent neurodegenerative conditions with memory loss and cognitive decline, which significant impacts on individuals and healthcare systems. Neurofibrillary tangles and beta-amyloid plaques in AD and Lewy bodies in PDD are regarded as the hallmark pathologies. There is no cure for both AD and PDD. Current treatments, cholinesterase inhibitors and memantine in AD and levodopa in PDD provide only modest symptom relief. However, there are limited options for treating the cognitive aspects. Current medications have limited efficacy and side effects.

P-9: Co-transplantation of autologous Treg cells in a cell therapy for Parkinson's disease

Tae-Yoon Park, Harvard University

The specific loss of midbrain dopamine neurons (mDANs) causes major motor dysfunction in Parkinson's disease (PD), rendering cell replacement a promising therapeutic approach. However, poor survival of grafted mDANs remains a major obstacle to successful clinical outcomes. Here we show that the surgical procedure itself (referred to here as "needle trauma") triggers a profound host response characterized by acute neuroinflammation, robust infiltration of peripheral immune cells, and brain cell death. When human induced pluripotent stem cell (hiPSC)-derived mDA cells were transplanted into the rodent striatum, <10% of implanted tyrosine hydroxylase (TH)+ mDANs survived 2 weeks post- transplantation. In contrast, TH- grafted cells mostly survived. Remarkably, transplantation of autologous regulatory T cells (TREG) greatly modified the response to needle trauma, suppressing acute neuroinflammation and immune cell infiltration. Furthermore, intra-striatal co-transplantation of TREG and hiPSC-derived mDA cells significantly protected grafted mDANs from needle trauma-associated death and improved therapeutic outcomes in 6-OHDA lesioned PD rodent models. Co-transplantation with TREG also suppressed undesirable proliferation of TH- grafted cells, resulting in more compact grafts with a higher proportion and higher absolute numbers of TH+ neurons. Taken together, these data emphasize the importance of the initial inflammatory response to surgical injury in differential survival of cellular components of the graft and suggest that co-transplantation of autologous TREG effectively reduces needle trauma-induced death of

mDANs, suggesting a potential strategy to achieve better clinical outcomes of PD cell therapy. In addition, we are planning to expand the application to other diseases such as Alzheimer's disease, Huntington's disease, and Amyotrophic Lateral Sclerosis that require cell transplantation.

P-10: Epigenetic Memory of Corona Virus Infection in Innate Immune Cells and Their Progenitors

Jin Gyu Cheong, Cornell University

Systemic inflammation may induce innate immune memory and persistent alterations in hematopoietic cells through epigenetic mechanisms. However, exploring these phenotypes in the context of human diseases, such as severe coronavirus disease 2019 (COVID-19), has been challenging. Using a combined single-nuclei RNA/ATAC-seq technique, which simultaneously provides access to the transcriptome and chromatin accessibility, we discovered that rare circulating hematopoietic stem and progenitor cells (HSPC) enriched from peripheral blood accurately reflect the diversity of HSPC in bone marrow. This enables the investigation of hematopoiesis and HSPC epigenomic changes following COVID- 19 without the need for bone marrow access. We observed that alterations in innate immune phenotypes and epigenetic programs of HSPC persisted for months to one year after severe COVID-19. These changes were associated with distinct transcription factor activities, such as AP-1s, IRFs, CEBPs, and CTCFs. The modified epigenetic programs correlated with altered regulation of inflammatory processes, leading to hyperresponsive phenotypes in post-COVID-19 monocytes upon non-SARS-CoV-2 viral stimulation and durable increases in myelopoiesis, as demonstrated by increased GMP frequency in the HSPC population. We showed that early IL-6 activity during acute COVID-19 contributed to these persistent phenotypes in both post-COVID-19 patients and an experimental mouse model of post-MHV-1 infection. We observed abrogation of the epigenetic alteration with anti-IL6R blockade treatment. HSPC retained epigenomic alterations that were conveyed, through differentiation, to progeny innate immune cells. This heritable epigenetic reprogramming of HSPC may underlie altered immune function following infection and be broadly relevant, particularly for millions of COVID-19 survivors with incomplete recovery. Moving forward, we are intensifying our exploration of the direct relationship between the observed epigenetic memory post-COVID-19 and its implications for PASC (post-acute sequelae of COVID-19). In parallel, we are extending our research workflow to a range of other diseases, including Inflammatory Bowel Disease (IBD), Multisystem Inflammatory Syndrome in Children (MIS-C), and various forms of cancer. Our aim is to identify whether epigenetic memory within HSPCs either predisposes individuals to these conditions or arises as a consequence of them. On a mechanistic level, we are scrutinizing the contributions of key cytokines, such as IL-6, in the establishment of this epigenetic memory in HSPCs. Lastly, we are delving into the specific physiological roles of circulating HSPCs with epigenetic memory.

P-11: Joint application of the target trial causal framework and machine learning modeling to optimize antibiotic therapy: Use case on Acute Bacterial Skin and Skin Structure Infections due to Methicillin-resistant Staphylococcus aureus

Inyoung Jun, University of Florida

Bacterial infections are responsible for high mortality worldwide. Antimicrobial resistance underlying the infection, and multifaceted patient's clinical status can hamper the correct choice of antibiotic treatment. Randomized clinical trials provide average treatment effect estimates but are not ideal for risk stratification and optimization of therapeutic choice, i.e., individualized treatment effects (ITE). Here, we leverage large-scale electronic health record data, collected from Southern US academic clinics, to emulate a clinical trial, i.e., 'target trial', and develop a machine learning model of mortality prediction and ITE estimation for patients diagnosed with acute bacterial skin and skin structure infection (ABSSSI) due to methicillin- resistant Staphylococcus aureus (MRSA). ABSSSI-MRSA is a challenging condition with reduced treatment options - vancomycin is the preferred choice, but it has non-negligible side effects. First, we use propensity score matching to emulate the trial and

create a treatment randomized (vancomycin vs. other antibiotics) dataset. Next, we use this data to train various machine learning methods (including boosted/LASSO logistic regression, support vector machines, and random forest) and choose the best model in terms of area under the receiver characteristic (AUC) through bootstrap validation. Lastly, we use the models to calculate ITE and identify possible averted deaths by therapy change. The out-of-bag tests indicate that SVM and RF are the most accurate, with AUC of 81% and 78%, respectively, but BLR/LASSO is not far behind (76%). By calculating the counterfactuals using the BLR/LASSO, vancomycin increases the risk of death, but it shows a large variation (odds ratio 1.2, 95% range 0.4-3.8) and the contribution to outcome probability is modest. Instead, the RF exhibits stronger changes in ITE, suggesting more complex treatment heterogeneity.

P-12: A Novel Method for Enhancing Immunoglobulin G Antibody Avidity through Noncovalent Catenation on Target Surfaces

Jinyeop Song, Massachusetts Institute of Technology

Immunoglobulin G (IgG) antibodies are widely used for diagnosis and therapy. Given the unique dimeric structure of IgG, we hypothesized that, by genetically fusing a homodimeric protein (catenator) to the C-terminus of IgG, reversible catenation of antibody molecules could be induced on a surface where target antigen molecules are abundant, and that it could be an effective way to greatly enhance the antigen-binding avidity. A thermodynamic simulation showed that quite low homodimerization affinity of a catenator, e.g., dissociation constant of 100 μM, can enhance nanomolar antigen-binding avidity to a picomolar level, and that the fold enhancement sharply depends on the density of the antigen. In a proof-of-concept experiment where antigen molecules are immobilized on a biosensor tip, the C-terminal fusion of a pair of weakly homodimerizing proteins to three different antibodies enhanced the antigen-binding avidity by at least 110 or 304 folds from the intrinsic binding avidity. Compared with the mother antibody, Obinutuzumab(Y101L) which targets CD20, the same antibody with fused catenators exhibited significantly enhanced binding to SU-DHL5 cells. Together, the homodimerization-induced antibody catenation would be a new powerful approach to improve antibody applications, including the detection of scarce biomarkers and targeted anticancer therapies.

P-13: Expanding Metal-Binding Pharmacophores for Fragment-Based Drug Discovery: Isosteric Replacement and Reactivity Masking Strategy

Hyeonglim Seo, University of California, San Diego

The use of metal-binding pharmacophores (MBPs) for fragment-based drug discovery (FBDD) has proven effective for targeting metalloenzymes. However, among clinically used metalloenzyme inhibitors, a limited number of MBPs have been employed to bind the active site metal ions and these common MBPs suffer from pharmacokinetic liabilities, which can undermine the development of such compounds into clinically effective therapeutics. In this presentation, several efforts are made to understand and develop a fragment library that broadens the scope of MBPs available for lead development. First, isosteric replacement of 8-hydroxyquinoline (8-HQ) was investigated. The quinoline pharmacophore and its bioisosteres are important building blocks to modulate drug-target interactions in the design of new bioactive molecules. In this respect, 8-HQ and its metal-binding Isosteres (MBIs) were investigated to explore unchartered territory in biochemical space and may improve potency and selectivity in FBDD. Their coordination chemistry, physicochemical properties, and related metalloenzyme inhibition activity were studied to establish drug-like profiles. Second, thioamide, thiourea, and thiocarbamate MBPs are introduced as potent warheads to mask the typical reactivity of thiol MBPs. Thiol-based MBPs have been suggested as potent warheads especially for Zn(II)-dependent metalloenzymes. Despite the strong Zn-S interaction, introducing the thiol moiety presents challenges arising from metabolic liabilities and chemical reactivity. Here, a facile approach to introducing masked thiols is proposed and demonstrated. The

reactivity, bioactivity, and structural studies show that those molecules can be used as ligands for Zn(II)-dependent metalloenzymes including human carbonic anhydrase II and matrix metalloproteinase-2.

P-14: Complex Coacervation Behavior in Complex Multi-Protein Mixtures

So Yeon Ahn, Columbia University

Liquid-liquid phase separation of biomolecules is increasingly recognized as relevant to various cellular functions, and complex coacervation of biomacromolecules, particularly proteins, is emerging as a key mechanism for this phenomenon. Complex coacervation is also being explored as a potential protein purification method due to its potential scalability, aqueous operation, and ability to produce highly concentrated product. The method involves partitioning the protein of interest into the coacervate phase by selective protein-polymer interaction under certain solution conditions. However, a complete understanding of the behavior of complex biosystems is yet to be elucidated, as most studies focus on a single protein. To address this, a system was designed to allow for the quantitative analysis of the complex coacervation of individual proteins within a multi-component mixture. The behavior of individual proteins was evaluated using a defined mixture of proteins that mimics the charge profile of the E. coli proteome. To allow for direct quantification of proteins in each phase, spectrally separated fluorescent proteins were used to construct the protein mixture. From this quantitative analysis, we observed that the coacervation behavior of individual proteins in the mixture was consistent with each other, which was distinctive from the behavior when each protein was evaluated in a single-protein system. The synchronized phase behavior was resistant to modest changes, including the charge patterning or charge identity on individual proteins or the fraction of components in the mixture. The comprehensive observation on complete components in a multi-component system allowed for understanding the parameters that determine interaction among the macromolecules in complex coacervation and successfully enriched a single protein of interest from the mixture of proteins.

P-15: Using an end-to-end deep learning model in older adults with MCI to identify AD risk factors in chromosome 19 that exacerbate cognitive decline

Jinhyeong Bae, Indiana University

Background: Research into genetic mapping possesses strong potential to inform the conversion from mild cognitive impairment (MCI) to Alzheimer's disease (AD). We extended our previously developed novel deep learning framework classifying AD vs. Cognitively unimpaired to analyze MCI participants. The top 35 strongest AD-risk factors and their chromosomal risk impact score (CRIS), which indicates each SNP's contribution in AD occurrence determined by the model, were utilized to characterize participants with MCI who were likely to convert to AD dementia (MCI-C) vs not (MCI-NC) over 3 years. **Method:** The highest CRIS-ranked 35 AD-risk SNPs were utilized to differentiate MCI-C(n=203) and MCI-NC (n=213) participants enrolled in the Alzheimer's Disease Neuroimaging Initiative. We predicted the rate of cognitive decline (memory, language, executive, and visuospatial function) in MCI using multiple regression with 5 SNPs' CRIS as predictors. Lastly, we performed computational CRISPR to demonstrate the impact of SNP rs56131196 (APOC1), the strongest AD-risk SNP, in MCI-C participants. **Results:** SNPs in APOC1, TOMM40, and NECTIN2 showed significantly stronger CRIS for MCI-C than MCI-NC participants ($p<0.001$). All regression models predicting the rate of cognitive decline were significant ($p<0.001$). The r^2-adjusted values were 0.279, 0.163, 0.098, and 0.178, for the memory, language, executive, and visuospatial models, respectively. MCI-C participants with the substitution of AA or AG genotype with GG were predicted to have a significantly lower likelihood of AD occurrence than those without substitution ($p<0.001$). **Conclusions:** Our deep learning model trained on AD and CU participants successfully determined SNPs that predict conversion from MCI to AD dementia. Genetic screening based on regression models could be useful for patient selection in clinical trials with disease-modifying therapies. Furthermore, our computational CRISPR simulations in MCI-C confirm the significant promise of CRISPR for precision medicine. In vitro and in vivo

animal and human studies exploring nucleotide-level substitutions are warranted to fully appreciate their role in translational neuroscience.

P-16: Regulation of the MDM2 Oncoprotein by a Nuclear Phosphoinositide Complex

Jeong Hyo Lee, University of Wisconsin-Madison

Background: The Mouse double minute 2 homolog (MDM2), E3 ubiquitin-protein ligase MDM2, is an important negative regulator of the p53 tumor suppressor. Our previous data showed that the type I phosphatidylinositol phosphate kinase (PIPKIα) and its product phosphatidylinositol-4,5-bisphosphate (PtdIns(4,5)P2) regulates the stability of p53. Methods: The Microscale Thermophoresis assays (MST), liposome sedimentation, and Western blot were conducted to quantitate the interaction between MDM2 and PtdIns(4,5)P2. Western blot and proximity ligation assay (PLA) were performed to investigate the association of MDM2 with phosphoinositide kinases and small heat shock proteins (sHSPs). In silico analysis was conducted to identify potential phosphoinositide-binding motifs in MDM2. Results: MDM2 binds to multiple phosphoinositides with the highest affinity for PtdIns(4,5)P2 in vitro. MDM2 also associates with PtdIns(4,5)P2 in various cell lines as determined by co-IP and PLA. Additionally, MDM2 interacts with phosphoinositide kinases including PIPKIα, which generates PtdIns(4,5)P2 and is required for MDM2-PtdIns(4,5)P2 complex formation. Interestingly, MDM2 also interacts with small Heat Shock Proteins (sHSPs). PtdIns(4,5)P2 regulates the formation of MDM2-sHSPs complexes and the interaction of MDM2 with p53. In addition, MDM2 has two potential consensus phosphoinositide-binding motifs. **Conclusions:** Our data demonstrate that PIPKα and its product PtdIns(4,5)P2 bind MDM2 and suggest that PtdIns(4,5)P2 binding may modify the interaction of MDM2 with p53 and/or other clients.

P-17: Regulation of T cell responses against intestinal microbes.

Dasom Kim, Cornell University

In the human body, dynamic interactions between the host and gut microbiota shape the development and responsiveness of the intestinal immune system. These interactions instruct the induction of protective immunity against pathogens while limiting aberrant responses against the microbiota. Breakdown of tolerance to the microbiota underlies the development of chronic inflammatory disorders such as inflammatory bowel disease (IBD). Clinical studies report increased levels of intestinal adherent-invasive E. coli (AIEC) strains in IBD patients, which are thought to amplify intestinal pathology. Patients with more severe disease also have anti-E. coli T and B cell responses. In animal and cell culture models, some strains do enhance intestinal damage or increase intestinal inflammation. In contrast, we previously identified a subset that is protective with improved intestinal healing after injury. We further demonstrated that this strain promotes macrophage production of IL-10, an anti-inflammatory cytokine, which is critical for AIEC-induced protection against colitis. In parallel, we find reduced number of colon T helper 1 (Th1) cells and increased regulatory T cell (Treg) cells. Here we demonstrate that CD4 T cells are required for AIEC- mediated protection from intestinal injury. Using DSS treatment and T cell transfer colitis models, we find AIEC colonization promotes both AIEC-specific Treg responses and pan-microbiota-specific Tregs. In the absence of macrophage or T cell IL-10 production, we find generation of AIEC specific Th1 responses. Taken together, we show that individual members of the microbiota can induce an anti-inflammatory environment that limits inflammatory microbiota specific T cell responses. Understanding this regulatory loop will allow us to develop novel therapies to limit intestinal inflammation and protect from IBD.

P18: Malformed Vasculature induced by ID1 in glioblastoma contributes to resistance of anti-angiogenesis therapy through Activin A

Sang-Hun Choi, Yale University

Bevacizumab (BVZ), a representative drug for anti-angiogenesis therapy (AAT), is a first-line treatment for patients with glioblastoma (GBM); however, its efficacy is limited. Several mechanisms have been proposed for

AAT resistance acquisition; however, the specific underlying mechanisms remain unclear. Here, we show that activin A upregulated by the inhibitor of differentiation 1 (ID1) in GBM, confers resistance to BVZ. The bipotent effect of activin A during its active phase reduced vasculature dependence in tumorigenesis. Activin A induced endothelial-to-mesenchymal transition via the Smad3/Slug axis upon temporary exposure, whereas persistent exposure led to endothelial apoptosis. Consequently, ID1 tumors exhibited a hypo-vascular structure, hyper-permeability, and significant presence of hypoxic areas, indicating resistance to BVZ. Finally, combination therapy with BVZ and SB431542, a Smad2/3 inhibitor, overcame AAT resistance and improved survival in a GBM mouse model. These findings offer valuable insights that could aid the development of new strategies for treating AAT-resistant GBM.

P-19: Circuit-based drug developments for dystonia and Parkinson's disease.

Daesoo Kim, NeuroTobe

The brain functions through the neural circuits formed by connected neurons. When neurons die or get damaged, neural circuits can't function properly, leading to brain disorders. We are studying and developing drugs to target the neural circuits responsible for movement disorders. Firstly, muscular dystonia is a brain disorder that causes abnormal muscle contractions, leading to distortion of parts or the entire body, and its exact cause is unknown. According to our research, excessive excitation of the serotonin neural circuit due to stress results in muscular dystonia. NT-1, which inhibits the 5HT-2A receptor, effectively suppresses muscular dystonia when orally administered, with no side effects at effective doses, and is expected to replace Botox, the current dominant drug in the market. Secondly, Parkinson's disease is a brain disorder caused by the death of dopamine cells and currently lacks appropriate treatments other than L-DOPA. While L-DOPA temporarily alleviates symptoms, its long-term use is problematic due to side effects. NT-3, which we have developed, is expected to effectively suppress symptoms in advanced-stage patients with dopamine cell death and potentially inhibit the death of dopamine cells. NeuroTobe is actively developing NT-1 and NT-3 as its primary focus. It also works on drugs to treat essential tremor, depression, and L-DOPA-induced dyskinesia.

P-20: ACTNOVA - AVATAR: AI Vision Analysis for Three-dimensional Action in Real-time.

Daegun Kim, ACTNOVA

Here, we developed a real-time 3D pose system that quantifies the various mice experiments, referred to as "AVATAR". Despite the fact that numerous AI behavior analysis studies have been presented, many behavior experiment paradigms still require the support of recent technologies. To address this issue, we present a novel open-field experimental hardware for multi-vision analysis and a real-time 3D pose quantitative method by employing the deep learning based object detection algorithm. In addition, we suggest advanced experimental paradigms and analysis that necessitate the AVATAR system. This can be used to reveal previously unseen behavioral patterns in the field of advanced mouse behavioral experiments, as well as to confirm the correlation with the brain circuit.

P-21: BMD-001, a nanoparticle containing miR-485-3p antisense oligonucleotide, blocks Alzheimer`s disease progression.

Ilsang Yoon, BIORCHESTRA

Alzheimer's disease (AD) is a form of dementia characterized by progressive memory decline and cognitive dysfunction, which affects more than 44 million people worldwide. Currently, there is no effective therapy for AD despite its increasing global incidence; thus, effective treatment strategies for AD are urgently needed. While several drugs that decrease amyloid beta (Aβ) production or increase Aβ clearance in the brain have been developed, treatment with these drugs is poorly correlated with improvements in AD severity and cognitive dysfunction. MicroRNA (miRNA) is a small, single-stranded, non-coding RNA molecule containing 21 to 23

nucleotides. A large number of studies have shown the important roles of miRNA in pathophysiology of various diseases including neurodegenerative disease. We have found through expression profiling screening that postmortem brains, blood plasma and CSF from AD patients have elevated levels of miR-485-3p when compared with healthy normal. We have also shown that BMD-001, a non-lipid poly-ion complex therapeutic which encapsulates antisense oligo against miR-485-3p, could cross the blood-brain barrier (BBB) and is delivered to deep brain tissues. BMD-001 also reduced Aβ pathology and neuroinflammation and restored cognitive functions of AD animal model. Taken together, BMD-001 may be a promising therapeutic candidate for treatment of AD pathology including cognitive decline, thus establishing a new paradigm in the AD field.

P-22: Most Advanced Digital PCR Technology to Detect Extremely Low Concentration of DNA/RNA.

SungWoon Lee, RevoSketch

To stabilize the quantitation accuracy under ultra-low DNA/RNA concentration, we developed a new real-time digital PCR platform. The digital PCR is composed of partitioning, amplifying, and detecting, 3 steps. We integrated the 3 steps into a single unit, and it gives real-time scan capability. This technology provides Auto-Partitioning, Real-time Scan and Neutral Network Base AI Discrimination features. The new platform shows superior LOD/LOQ performance than present digital PCR systems.

P-23: A PLATFROM Technology-based, Global Leading-caliber CTDMO.

Keerang Park, CdmoGen

A one-stop CTDMO, CdmoGen Co., Ltd. offers comprehensive and integrated contract services spanning the full length of the cell and gene therapy development cycle. From early optimization and process development, to the GMP and non-GMP manufacture of virus vector- and mRNA-based therapeutics, through CMC support and a robust panel of quality analyses, including lot release testing, CdmoGen is a full-service partner providing reliable and efficient support throughout the developmental process. In addition to being recognized as the first GMP-compliant manufacturer approved by the Ministry of Food and Drug Safety (Republic of Korea), CdmoGen is ISO17025-accredited, and since 2016, has successfully completed over 200 GMP manufacturing and QC testing projects involving virus vector-based gene therapeutics and vaccines. To further expand its service offerings, CdmoGen brought online in 2023 a custom-built facility dedicated to the manufacture and testing of mRNA vaccines, with over 3,500 square feet dedicated for these purposes, while significantly increasing its customs service's capabilities as well. Virus seed stock and cell banking will also take place in this facility. Since its inception, CdmoGen has expanded its knowledge and experience capacities while establishing a track record for success, with a CTDMO customer having recently been approved for a clinical trial by the FDA, while CdmoGen moving forward will do all it can to provide every partner with the support they need to achieve their own successes in the development of biopharmaceuticals and cell and gene therapeutics.

P-24: Preclinical study of diabetic foot ulcers: Efficacy test of vascular stem cells in rodent model.

Seung Ho Yoo, YOUTH BIO GLOBAL

Endothelial colony-forming progenitor cells (ECFC) are currently considered as a promising cell therapeutic intervention for neovascularization and reperfusion in chronic peripheral vascular disease. ECFC have self-renewal capacity and form characteristic high-proliferative potential colonies, with each having a significant capacity for long-term cultures (>15 passages) and expansion of cells with clear characteristics of endothelial cells. We have generated novel formulation with natural bioactive ingredients to protect against endothelial dysfunction. We investigated the phenotypic and functional characterization of YBG's ECFC which are readily isolated from adult umbilical cord blood circulation. YBG's ECFC showed more than 90% of CD34-positive fraction using unique isolation strategy even without selection of cell populations. Functionally, CD34+ ECFC exclusively harbors the potential for differential proliferative capacity without characteristic changes. The application of CD34+ ECFCs

engraft better and enhance reperfusion in rodent hind limb ischemia, where tube formation was also improved. Closure of wound defect was apparent in ECFC-treated SD rats, decreasing the healing time. We demonstrated that YBG's ECFC are highly qualified homogenous CD34+ endothelial progenitor cells with self-renewal and potential to enhance the use in clinical therapy for ischemic diabetic wound.

P-25: Eco-friendly menstrual cups and innovative menstrual cup containers with antibacterial effects.

Migak Hwang, Oldam

Oldam, an environmentally-conscious hygiene care brand, introduces eco-friendly menstrual cups and innovative containers with potent antibacterial properties. Amidst the growing preference for menstrual cups over traditional tampons—due to environmental concerns and health risks like Toxic Shock Syndrome (TSS)—there remains a gap in antibacterial safety. Our menstrual cups, made of 100% non-toxic medical-grade silicone, offer durability and security, ensuring no leakage. They are complemented by our unique antibacterial containers which utilize a silver ion mechanism to prevent bacterial growth. Laboratory tests validate that our products achieve a 99.9% antibacterial effect against major pathogens, ensuring optimal health and safety for users. With a commitment to natural materials and minimizing chemical use, our products offer both eco-friendliness and peace of mind in menstrual hygiene.

P-26: Characterization Study of AAV8 and Lentivirus.

Grace Lee, Matica Biotechnology

At Matica Biotechnology, we employ cutting-edge processes, state-of-the-art equipment, and advanced analytics to offer comprehensive analytical services, tailored to your specific needs and regulatory requirements. Our experts cover the entire spectrum from preclinical to commercial stages, providing streamlined analytical services. Our AAV8 Characterization showcases Matica's advanced methodologies and scientific expertise. We conducted in-house characterization of commercially available AAV8-GFP using our proprietary analytical methods and qualified instruments. Our assays encompass titer assessment by ELISA and ddPCR, size and polydispersity analysis by DLS and SLS, as well as the development of an AAV8 Empty:Full ratio metric and quantitative IEX HPLC method, alongside process residual characterization. We also offer custom infectivity assays such as TCID50, IFA, and plaque methods. Similarly, our Lentivirus Characterization exemplifies our advanced tools, methodologies, and scientific excellence. We conducted in-house characterization of commercially available Oxgene Lentivirus GFP, utilizing our in-house analytical methods and qualified instruments. Our assays involve titer assessment by ELISA and RT-qPCR, as well as size and polydispersity analysis by DLS and SLS. Representative results are presented in the poster, underscoring our commitment to advancing your projects in the field of gene therapy.

P-27: Open Innovation at Songdo: Case of Korea National Institute for Bioprocessing Research & Training.

Seungyeop Baek, Incheon Technopark

Demand for biopharmaceuticals has been increasing rapidly worldwide, and during the COVID-19 pandemic the biopharmaceutical industry became even more important. Consequently, as the biopharmaceutical market is growing significantly, corporate investment is expanding and demand for skilled professionals is increasing greatly. Although companies are demanding more professionals who are fully equipped to work immediately in the field, there are not enough of them available. To solve this shortage, practical training needs to be carried out in GMP facilities, but due to contamination and security problems at facilities, there is demands for dedicated bioprocessing training facilities. Accordingly, the government initiated a project to solve these problems and the 'Incheon City - Incheon Technopark - Yonsei University' consortium has been selected to construct a bioprocessing training center and set up a K-NIBRT (Korea-National Institute for Bioprocessing Research and Training). Incheon City, Incheon Technopark and Yonsei University are in charge of the center's construction, center management, and training operations, respectively. The bioprocessing training center, which will be equipped with GMP-level facilities is being

constructed in Songdo, Incheon. Construction was scheduled to commence in June 2023, and the center is expected to open in November 2024. While the building is being constructed, the demo-training on production of antibodies and vaccines is being provided in practical training center of Yonsei University. The curriculum will be provided by Ireland's NIBRT, an advanced institute for bioprocessing education and it will offer both degree and non-degree programs. It is planned to offer training courses using digital transformation, and courses related to high-tech biopharmaceuticals including cell-therapy products and gene-therapy products. There are also plans to establish a separate corporate body to operate the center efficiently.

P-28: JW Platform based Drug Discovery: Case Studies.

Seojean Lee, JW Pharma

Establishment of AI/ML enabled drug development platform integrated with well organized Wet-Lab platform (i.e. Focused chemical libraries, Biochemical, Pharmacodynamic and Pharmacokinetic testing technologies) is expected to accelerate drug development process and success rate in Biopharmaceutical industry. Since the early of 2010s, JW has been established own unique AI/ML driven Discovery Research Platform CLOVER & JWELRY and STAT/WNT signal focused screening platform with relevant disease finding models for Innovative Discovery Research. Here we present our representative drug discovery cases: JW2286 (selective $STAT_3$ direct inhibitor) and JW0061(GFRA1-Wnt activator). JW2286 is a $STAT_3$ inhibitor that directly binds to the $STAT_3$ N-terminal domain. Through cancer cell panel screening in CLOVER, JW2286 exhibits strong anti-cancer potency on breast cancer cell lines, especially triple-negative breast cancer (TNBC) lines. The anti-cancer mechanism of JW2286 has been elucidated: Firstly, JW2286 impairs pY705-$STAT_3$, which disrupts pro-tumorigenic transcriptional programs mediated by $STAT_3$. Secondly, JW2286 also blocks pS727-$STAT_3$, leading to mitochondrial dysfunction and AMPK activation. Consequently, cancer cells treated with JW2286 undergo growth arrest and apoptosis. The efficacy of JW2286 has been further validated using cancer cell line- and patient-derived xenograft models. Currently, JW2286 is under preclinical development and is highly expected to be a promising anticancer therapeutic option in the near future. In another case, JW0061 is a WNT activator that increases the amount of nuclear β-catenin, stimulating WNT signaling in various cell types, including DP cells. A high-throughput screening campaign with JWELRY, a highly focused Wnt modulator library of JW, identified and optimized the novel Wnt activator, JW0061. It was found that JW0061 acts as an agonist on GFRA1 to activate GFRA1-RET signaling cascades, followed by WNT activation through β-catenin stabilization. JW0061 eventually promotes DP cell proliferation via increased VEGFR2 expression mediated by WNT signaling. Furthermore, JW0061 induces the anagen phase in the hair cycle and hair growth, which are highly correlated with WNT activation in various efficacy models. JW0061 is currently under GLP toxicology studies. Considering the limited therapeutic options for androgenic alopecia, JW0061 is proposed as a novel therapeutic option that complements and offers an alternative to the standard of care. Conclusion: JW2286 and JW0061 were successfully generated and optimized by utilizing CLOVER/JWERLY Platform. JW2286 and JW0061 are planned to enter Phase 1 clinical trial to target solid cancers and hair-loss respectively in the early of 2024.

P-29: Improving Drug Discovery through the combined application of AI-based and Physics-based methods.

Sang Eun Jee, XtalPi, Inc

AI-based tools are rapidly being incorporated in the drug discovery space. Nevertheless, obstacles like low-quality data and the complexity of integrating AI into intricate scenarios frequently impede the broader adoption of AI. This presentation demonstrates how combining AI-based and physics-based methods can significantly benefit drug discovery. Additionally, we will discuss case studies highlighting the use of XtalPi's intelligent computing in challenging drug design problems including PROTACs and covalent ligands.

P-30: In vivo Real- time Cellular-level Imaging of Internal Organ in a Live Animal following Drug types.

Hyun Seok Kim, Soyeon Ahn, Hyungjin Kwon, IVIM Technology

Past Awardees

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2009	Jong Eun Kim	Gilead Sciences, Inc., Currently Kainos Medicine Inc, Korea
2010	David C. Chu	University of Georgia
2011	Sung Ho Kim	University of California, Berkeley
2012	Dennis Choi	Stony Brook Medicine and Stony Brook University
2013	Joseph Kim	Inovio Pharmaceuticals
2014	Kinam Park	Purdue University
2015	Jong Sung Koh	Genosco
2016	Jang-Ho Cha	Novartis
2017	Peter Park	Bicycle Therapeutics
2018	Jong Wook Lee	Daewoong Pharmaceuticals
2019	Kwang-Soo Kim	Harvard Medical School
2020	Larry Kwak	City of Hope
2021	Daniel C. Chung	SparingVision
2022	Jae Park	Memorial Sloan Kettering Cancer Center (MSKCC)
2023	Holly Kimko	AstraZeneca

KASBP RECOGNITION AWARD

2015	Jong Wook Lee	Daewoong Pharmaceutical Co. Ltd.

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2008	HeungKyu Lee (Yale University), JungHwan Kim (Rutgers University), MinSik Kang (Columbia University)
2009	JinAh Park (Harvard University), JaeMin Choi (Yale University), DeokHo Kim (Johns Hopkins University)
2010	JungMin Kee (Rockefeller University), HyungWook kim (NIH), SeJin Ahn (Harvard University)
2011	MooRi Han (University of California, LA), HwanJong Jang (Boston College)
2012	JeongHo Jang (Columbia University), JaeWoo Choi (Oregon State University)
2013	JangEun Lee (University of Pennsylvania), Eun Chan Park (Rutgers University)
2014	Kimberly H. Kim (Harvard University), Seung Koo Lee (Weill Cornell Medical College), Min-Sik Kim (Johns Hopkins University)
2015	Jiyeon Kim (UT Southwestern), Sun Mi Park (Memorial Sloan-Kettering Center), Byeong Seon Kim (University of Pennsylvania)
2016	Sang Bae Lee (Columbia University), Junil Kim (University of Pennsylvania), Ho-Keun Kwon (Harvard Medical School)
2017	KyeongJin Kim (Columbia University Medical Center), Min-Ji Bak (Ernest Mario School of Pharmacy), Heung Sik Hahm (Free University Berlin)
2018	Jung Ho Hyun (Max-Plank Florida Institute for Neuroscience), Seung Hoon Lee (Harvard Medical School), Jang Hwan Cho (Boston University)
2019	Hyunyong Koh (Boston children's Hospital), Young Cha (MeLean Hospital), Hojong Yoon (Harvard University)
2020	Jun Young Hong (Yale University), Heeseon An (Harvard Medical School), Yoon Seok Kim (Stanford

University)

2021 Youngeun Kim (Harvard Medical School), Juhyun (Julie) Oh (Harvard Medical School), Rafael Taeho Han (University of California, San Francisco)

2022 Inyoung Jung (Univ. of Pennsylvania), Lee Joon Kim (Lawrence Berkeley National Laboratory), Benjamin Lew (UIUC)

2023 Yoon-Ho Hwang (University of Pennsylvania), Ukhyun Jo (National Cancer Institute)

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2011 HanSang Cho (Harvard Medical School), SungWoong Kang (Johns Hopkins University), MiYeon Kim (Columbia University), JaeYoung Soh (Rutgers University), SungYong Hwang (NIEHS/NIH)

2012 WonJin Cho (Drexel University), HyoJung Kang (Yale University), JungHyun Lee (Columbia University), YongJae Lee (Yale University), JaeHyun Yoon (NIH)

2013 Yunjong Lee (Johns Hopkins University), Jun-Dae Kim (Yale University), Bae-Hoon Kim (Yale University), Ja Young Kim-Muller (Columbia University)

2014 Catherine Rhee (University of Texas at Austin), Ji-Seon Seo (The Rockefeller University), Sehyun Kim (New York University)

2015 Young-Su Yi (New York University), Hee-Woong Lim (University of Pennsylvania), Bloria Bora Kim (The Pennsylvania State University)

2016 Eui Tae Kim (University of Pennsylvania), Kihyun Lee (Weill Cornell Medical Science)

2017 Seung-Yeol Park (Harvard medical school), Young Bok Abraham Kang (Harvard medical school)

2018 Jae Yeon Hwang (Yale University), Youngjin Kim (Rockefeller University)

2019 Hongsuk Park (Washington University School of Medicines in St. Louis), Byungyong Ahn (University of Pennsylvania)

2020 Namgyu Lee (University of Massachusetts)

2022 Thomas TaeHyung Kim (Picower Institute, MIT), Jaehyeok Jin (Columbia Univ.), Seung Hun Park (MGH, Harvard Medical School)

2023 Sang-Hun Kim (Yale University), Jong-Duk Park (Princeton University)

KASBP-HANMI FELLOWSHIP

2011 HyungJin Ahn (Rockefeller University), ChangHoon Cho (Abramson Research Center)

2012 YuNa Kim (University of North Carolina), HyunSeob Tae (Yale University), InHye Lee (NIH)

2013 JooHee Lee (Memorial Sloan-Kettering Cancer Center), KyungRyun Lee (Rutgers University), ManRyul Lee (Indiana University)

2014 Young Chan Cha (Wistar Institute), Min-Kyu Cho (New York University), Lark Kyun Kim, (Yale University), Yu Shin Kim (Johns Hopkins University)

2015 Seonil Kim (New York University), Peter B. Kim (Yale University)

2016 Sungwhan Oh (Harvard Medical School), Won-Gil Lee (Yale University), Hee-Jin Jeong (Harvard Medical School)

2017 Seungkyu Lee (Harvard Medical School), Soo Seok Hwang (Yale University), Heeoon Han (University of Pennsylvania)

2018 Jae Yeon Hwang (Yale University), Yeong Shin Yim (MIT), Dahea Yu (Rutgers University)

2019 Seung Wook Kim (University of Texas at Austin), Kwang-Su Park (Ichan School of Medicines at Mt. Sinai), Jooman Park)University of Massachusetts)

2021 Taekyung Kwak (The Wistar Institute), WooriKim (Harvard Medical School), Tae-Yoon Park (McLean Hospital)

2022 Hyuna Jo (University of California, Irvine), Changrim Lee (Harvard Medical School), Danielle (Hyun Jung) Kim (University of California, Davis)

KASBP-LG CHEM FELLOWSHIP

2017 Kyoung-Dong Kim (Wistar Institute), Seok-Man Ho (Icahn School of Medicine at Mount Sinai)

2019 Jea Hyun Baek (Biogen Inc.), Donggi Paik (Harvard Medical School)

KASBP-QURIENT FELLOWSHIP

2018 Soeun Kang (University of Illinois at Chicago), Do Hyung Kim (Johns Hopkins University)

KASBP-YUHAN FELLOWSHIP

2011 Kiyoung Kim (Boston University), Joongseop Shim (Johns Hopkins University)

2012 Yemin Huh (University of Michigan), Sookhee Bang (University of Pennsylvania), Jungho Baik (Columbia University)

2013 Dong Jun Lee (University of Chicago), Ingyu Kim (Yale University), Ja Yil Lee (Columbia University)

2014 Seouk Joon Kwon (Rensselaer Polytech Institute), Jeongmin Song (Yale University), Jae-Hyun Yang (Harvard Medical School), Wan Seok Yang (Columbia University)

2015 Min-Joon Han (Harvard Medical School), Minjung Kang (Cornell University)

2016 Ki Su Kim (Harvard Medical School), Hongjae Sunwoo (Harvard Medical School), Seo-Young Park (University of Massachusetts)

2017 Hanseul Yang (Rockefeller University), Ji-Hoon Park (NIH), Hong-Yeoul Ryu (Yale University)

2018 Sangdoo Kim (Harvard Medical School), Baehyun Shin (Harvard Medical School), Mikyung Yu (Harvard Medical School)

2019 Hyunkyung Jung (University of Illinois at Urbana Champaign), Woosook Kim (Columbia University), Sungjoon Cho (University of Illinois at Chicago)

2021 Sekyu Choi (Harvard University), Sungyun Cho (Weill Cornell Medical Colleage), Dongheon Lee (Duke University)

2022 Yongmin Cho (Harvard Medical School), Ho Namkung (Johns Hopkins University), Hyeonglim Seo (UCSD)

KASBP-DONG-A FELLOWSHIP

2009 SangHo Choi (NIH)

2010 Min Jae Lee (Yale University)

2023 Yun Ha Hur (The Rockefeller University), Heejin Jo (Johns Hopkins University)

KASBP FELLOWSHIP

2016 Jung-Eun Jang (New York University), Byungsu Kwon (MIT)

2010 SangRyung Kim (Columbia University), TaeSook Yoon (Rutgers University), EunMi Huh (Cal. Tech.)

2015 Mi Jung Kim (Duke University), Minyoung Park (The Rockefeller University)

2019 Kyusik Kim (University of Massachusetts Medical School)

KASBP-KSEA FELLOWSHIP

2013 Sung In Lim (University of Virginia)

2014 Keun-woo Jin (Temple University)

KASBP-KUSCO FELLOWSHIP

2008 HyunHo Kim (National Institutes of Health), TaekBeom Ohn (Harvard Medical School), WonAh Joo (Wistar Institute)

KASBP-KRICT FELLOWSHIP

2009 SeungSik Shin (Rutgers University), EunJoo Jeong (Columbia University), KyuWon Baek (University of Pennsylvania)

KASBP-SAMSUNG FELLOWSHIP

2019 Eunju Im (Nathan S. Lline Institutue for Psychiatry Research), Jongho Park (Massachusetts General Hospital)

KASBP-KRIBB FELLOWSHIP

2019 Song Min (Harvard Medical School), Eun-Ik Koh (University of Massachusetts Medical School)

KASBP-KHIDI FELLOWSHIP

2010 JaeHyunBae (Yale University), HeeYeon Cho (Boston College)

2020 Haejin Yoon (Harvard Medical School)

2022 Se-Yeong Oh (Emory University), Soojin Lee (UMass Medical School)

KASBP- CHOONGCHEONGBUK-DO FELLOWSHIP

2020 Su Bin Lim (Johns Hopkins University), Brandon Suh (Harvard University)

KASBP-ISUABXIS FELLOWSHIP

2020 Jongwoo Son (University of Wisconsin-Madison), Won Dong Lee (Princeton University)

2021 Yong-Woo Jun (University of Massachusetts Medical School), Yu Young Jeong (Rutgers University)

KASBP-SEEGENE FELLOWSHIP

2020 Haejin Kim (Columbia University)

KASBP-MDIMUNE FELLOWSHIP

2020 Young Jae Woo (Icahn School of Medicine at Mount Sinai)

KASBP-NANOENTEK FELLOWSHIP

2020 Jongkyun Kang (Brigham and Women's Hospital)

KASBP-ENZYCHEM FELLOWSHIP

2021 Jinwoo Kim (Stony Brook University)

KASBP-SAMYANG FELLOWSHIP

2021 Kyongman An (Johns Hopkins University)

KASBP-SK BIOPHARM (KASBP-SKBP)FELLOWSHIP

2019 Jung Eun Paik (Memorial Sloan Kettering Cancer Center), Jeongjoon Choi (Yale University)

2021 Sung-Hee Yoon (Harvard Medical School)

KASBP-SK BIOSCIENCE FELLOWSHIP

2022 Woo Yong Park (NCI), Sungwook Jung (BWM at Harvard), Yunju Jeong (BWH at Harvard)

KASBP-ABTIS FELLOWSHIP

2021 Yunju Yang (University of Texas Health Science Center at Huston)

KASBP-EUTILEX FELLOWSHIP

2021 Yun Hwa Choi (University of Wisconsin-Madison)

KASBP-KPBMA FELLOWSHIP

2021 Dahye Kang (Harvard Medical School), Bumjun Kim (Princeton University)

KASBP-ITP YONSEI FELLOWSHIP

2021 Jaeho Shin (University of Notre Dame), Jeonghwan Kim (OSU & OHSU)

2022 Jae Kyo Yi (DFCI at Harvard Medical Center)

2023 Chiho Kim (Columbia University)

KASBP-KAIST/GCC FELLOWSHIP

2021 Seungbeom Ko (Medical University of South Carolina), Annie J. Lee (Columbia University Medical Center)

2022 Hyejoon Jeong (Univ. of Pennsylvania)

2023 Hong-Gyun Lee (Harvard University)

KASBP-DAEWOONG SCHOLARSHIP

2006 Jin K. Pai (Handok Pharmaceuticals, Korea)

2007 YoungWhan Park (National Cancer Center, Korea)

2008 Young-Choon Moon (PTC Therapeutics)

2009 HongYong Kim (Novartis)

MOGAM-KASBP SCHOLARSHIP

2022 Yehlin Cho (MIT), Jayoung Ryu (Harvard), Jee Won Yang (Caltech), Hyoann Choi (Georgia Tech), Sookyung Kim (UMass Medical School), HyeRin Leah Yim (Mount Sinai), Byunggik Jason Kim (Johns Hopkins), Sally Chung (Johns Hopkins)

2023 Saejeong Park (Yale University), Inyoung Jun (University of Florida), Jinyeop Song (MIT), Hyeonglim (Stella) Seo (UCSD), Songmi Lee (University of Texas), So Yeon Ahn (Columbia University), Jinhyeong Bae (Indiana University), Jeong Hyo Lee (University of Wisconsin-Madison), Dasom Kim (Cornell University), Andrew (Ho-Young) Chung (Cornell University)

2023 KASBP Fall Symposium Attendees

	Last Name	First Name	한글 이름	Work	Small group networking
1.	Ahn	ByungEun	안병은	AITRICS	Digital Health / Bioinformatics / A.I. / Machine Learning / Quantitative Science
2.	Ahn	So Yeon	안소연	Columbia University	Medicinal Chemistry / Drug Discovery & Delivery / Preclinical / Micro-Nanotechnology
3.	AHN	SOYEON	안소연	IVIM Technology	Medicinal Chemistry / Drug Discovery & Delivery / Preclinical / Micro-Nanotechnology
4.	Ahn	Jae	안재영	Voronoi	Business Development/Venture Capital/Entrepreneurship/Legal/Consulting/Government Relations
5.	Ahn Wisner	Kyunghye	안경혜	ReAx Biotechnologies	Medicinal Chemistry / Drug Discovery & Delivery / Preclinical / Micro-Nanotechnology
6.	An	Sunmi	안선미	AbbVie	Business Development/Venture Capital/Entrepreneurship/Legal/Consulting/Government Relations
7.	Back	Jungho	백정호	AccessBio Inc	Medical Device/In Vitro Diagnostics/Biomedical Engineering/Analytical Method Development
8.	Bae	Jinhyeong		Indiana University	Neurological Disorders/Alzheimer's Disease/Parkinson's Disease/Aging
9.	Bae	Narae	배나래	Novartis	CMC / Quality Assurance / Regulatory Affairs / Project Management
10.	Bae	Jihyun	배지현	U.S. Food and Drug Administration	Clinical Trial & Development / Clinical Pharmacology / Biostatistics
11.	Baek	Juhyun Sophia	백주현	Bio Blossom Consulting LLC	Business Development/Venture Capital/Entrepreneurship/Legal/Consulting/Government Relations
12.	Baek	Seungyeop	백승엽	Incheon Technopark	Medical Device/In Vitro Diagnostics/Biomedical Engineering/Analytical Method Development
13.	Ban	Hyoju	반효주	Thermo Fisher Scientific	Business Development/Venture Capital/Entrepreneurship/Legal/Consulting/Government Relations
14.	Byun	Jaemin	변재민	HMH-CDI	Immunology-Oncology / Autoimmune / Inflammatory Diseases
15.	Cha	Jihye	차지혜	NuEyne	Medical Device/In Vitro Diagnostics/Biomedical Engineering/Analytical Method Development
16.	Chae	Young Chan	채영찬	UNIST	
17.	Chang	Hyun-Kyung	장현경	Columbia University	Neurological Disorders/Alzheimer's Disease/Parkinson's Disease/Aging
18.	Chang	Kern	장건희	Lotte Biologics	CMC / Quality Assurance / Regulatory Affairs / Project Management
19.	CHANG	JAMES	장병식	Nano-Ditech Corporation	Medical Device/In Vitro Diagnostics/Biomedical Engineering/Analytical Method Development
20.	CHANG	RAE SUNG	장래성	Regeneron	Cell and Gene Therapy / Rare Diseases
21.	Cheong	Jin Gyu	정진규	Weill Cornell Medicine	Immunology-Oncology / Autoimmune / Inflammatory Diseases
22.	Cho	Woo-Hyun	조우현	Albert Einstein college of medicine	Neurological Disorders/Alzheimer's Disease/Parkinson's Disease/Aging
23.	Cho	Hanna		Biomea Fusion, Inc.	

	Last Name	First Name	한글 이름	Work	Small group networking
24.	Cho	Richard	조중호	East Orange VA Medical Center	Digital Health / Bioinformatics / A.I. / Machine Learning / Quantitative Science
25.	Cho	Sunghyun	조성현	Harvard University	Neurological Disorders/Alzheimer's Disease/Parkinson's Disease/Aging
26.	Cho	Jaemin	조재민	JCRPM LLC	Business Development/Venture Capital/Entrepreneurship/Legal/Consulting/Government Relations
27.	Cho	Junho	조준호	Kaigene	Immunology-Oncology / Autoimmune / Inflammatory Diseases
28.	Cho	Hyein		Princeton University	Medicinal Chemistry / Drug Discovery & Delivery / Preclinical / Micro-Nanotechnology
29.	Cho	Keun Yong	조근용	SK Biopharmaceuticals	Business Development/Venture Capital/Entrepreneurship/Legal/Consulting/Government Relations
30.	Cho	Hyunah		St. John's University	Medicinal Chemistry / Drug Discovery & Delivery / Preclinical / Micro-Nanotechnology
31.	Choe	Yun H.	최윤	ArentFox Schiff LLP	Business Development/Venture Capital/Entrepreneurship/Legal/Consulting/Government Relations
32.	Choi	Doonam	최두남	Aitrics	Digital Health / Bioinformatics / A.I. / Machine Learning / Quantitative Science
33.	Choi	Soon Gang	최순강	Ginkgo Bioworks	Business Development/Venture Capital/Entrepreneurship/Legal/Consulting/Government Relations
34.	Choi	Jay	최재명	Huons USA, Inc.	Business Development/Venture Capital/Entrepreneurship/Legal/Consulting/Government Relations
35.	Choi	Dayun	최다윤	MCPHS University	Digital Health / Bioinformatics / A.I. / Machine Learning / Quantitative Science
36.	Choi	Jung-Hwan	최정환	New York University	Neurological Disorders/Alzheimer's Disease/Parkinson's Disease/Aging
37.	CHOI	JEEA	최지아	Novartis	Immunology-Oncology / Autoimmune / Inflammatory Diseases
38.	Choi	Junyong	최준용	Queens College - CUNY	
39.	Choi	Garam	최가람	Rutgers New Jersey Medical School	Immunology-Oncology / Autoimmune / Inflammatory Diseases
40.	Choi	Jong Gil	최종길	SK Life Science Inc	Digital Health / Bioinformatics / A.I. / Machine Learning / Quantitative Science
41.	Choi	Jeongmoon	최정문	University of Pennsylvania	Medicinal Chemistry / Drug Discovery & Delivery / Preclinical / Micro-Nanotechnology
42.	Choi	Kyuhyun	최규현	University of Pennsylvania	
43.	Choi	Changseon	최창선	Yale University	Medicinal Chemistry / Drug Discovery & Delivery / Preclinical / Micro-Nanotechnology
44.	Choi	Sang-Hun	최상훈	Yale University	Neurological Disorders/Alzheimer's Disease/Parkinson's Disease/Aging
45.	CHUN	HEEJUNG	천희정	WOOJUNGBIO	Business Development/Venture Capital/Entrepreneurship/Legal/Consulting/Government Relations
46.	Chung	Seungwon	정승원	AbbVie	
47.	Chung	Andrew	정호영	Cornell University	Clinical Trial & Development / Clinical Pharmacology / Biostatistics
48.	Chung	Eugene		CUNY Queens College	Medicinal Chemistry / Drug Discovery & Delivery / Preclinical / Micro-Nanotechnology

	Last Name	First Name	한글 이름	Work	Small group networking
49.	Chung	Seung Wook	정승욱	Janssen	Digital Health / Bioinformatics / A.I. / Machine Learning / Quantitative Science
50.	Chung	Sally	정혜린	Johns Hopkins University	CMC / Quality Assurance / Regulatory Affairs / Project Management
51.	Chung	Sang Mok	정 상목	LG Chem Life Sciences USA	CMC / Quality Assurance / Regulatory Affairs / Project Management
52.	Chung	Younghoon	정영훈	MCPHS Worcester Campus	Clinical Trial & Development / Clinical Pharmacology / Biostatistics
53.	Chung	Cheol Keun	정철근	Merck	CMC / Quality Assurance / Regulatory Affairs / Project Management
54.	Chung	Jumi	정주미	Neuronity Therapeutics, Inc.	Neurological Disorders/Alzheimer's Disease/Parkinson's Disease/Aging
55.	Chung	Jae Wook		SK Biopharmaceuticals	Business Development/Venture Capital/Entrepreneurship/Legal/Consulting/Government Relations
56.	Dho	Yaereen	도예린	Stanford University	Medicinal Chemistry / Drug Discovery & Delivery / Preclinical / Micro-Nanotechnology
57.	Fang	Mingzhu	방명주	Bristol Myers Squibb	Medicinal Chemistry / Drug Discovery & Delivery / Preclinical / Micro-Nanotechnology
58.	Geum	Taeeul	금태을	ACTNOVA	Business Development/Venture Capital/Entrepreneurship/Legal/Consulting/Government Relations
59.	Ha	Shinwon	하신원	Johns Hopkins Univ.	Neurological Disorders/Alzheimer's Disease/Parkinson's Disease/Aging
60.	Ha	Seungjin	하승진	Nano-Ditech	CMC / Quality Assurance / Regulatory Affairs / Project Management
61.	HAHM	Sean	함성원	The Yakup Shinmoon	
62.	Han	Jonghee	한종희	Reata Pharmaceuticals	Neurological Disorders/Alzheimer's Disease/Parkinson's Disease/Aging
63.	Han	Daehee	한대희	Standigm	Digital Health / Bioinformatics / A.I. / Machine Learning / Quantitative Science
64.	Han	Gyoonhee	한균희	Yonsei University	Medicinal Chemistry / Drug Discovery & Delivery / Preclinical / Micro-Nanotechnology
65.	Hankoua	Bertrand		Delaware State University	Medicinal Chemistry / Drug Discovery & Delivery / Preclinical / Micro-Nanotechnology
66.	Hong	Ted	홍찬영	AstraZeneca	Digital Health / Bioinformatics / A.I. / Machine Learning / Quantitative Science
67.	HONG	SUNHEE	홍선희	ExoRenal	Business Development/Venture Capital/Entrepreneurship/Legal/Consulting/Government Relations
68.	hong	seoyeon	홍서연	Purdue university	
69.	Hur	Eun Mi	허은미	Bristol Myers Squibb	Immunology-Oncology / Autoimmune / Inflammatory Diseases
70.	Hur	Yun Ha	허윤하	The Rockefeller University	Neurological Disorders/Alzheimer's Disease/Parkinson's Disease/Aging
71.	Hwang	Dobeen		AACR-Bayer Fellow	Immunology-Oncology / Autoimmune / Inflammatory Diseases
72.	Hwang	Ji Yeon	황지연	Albert Einstein college of medicine	Neurological Disorders/Alzheimer's Disease/Parkinson's Disease/Aging
73.	Hwang	Dasom	황다솜	Columbia University	Cell and Gene Therapy / Rare Diseases
74.	Hwang	Migak	황미각	Oldam	Business Development/Venture Capital/Entrepreneurship/Legal/Consulting/Government Relations

	Last Name	First Name	한글 이름	Work	Small group networking
75.	Hwang	Sunghoon	황성훈	Princeton University	Business Development/Venture Capital/Entrepreneurship/Legal/Consulting/Government Relations
76.	Hwang	Howook	황호욱	Schrodinger	Digital Health / Bioinformatics / A.I. / Machine Learning / Quantitative Science
77.	Hwang	Yoon-Ho	황윤호	University of Pennsylvania	Medicinal Chemistry / Drug Discovery & Delivery / Preclinical / Micro-Nanotechnology
78.	Hwang	Sungyong	황성용	US FDA	Immunology-Oncology / Autoimmune / Inflammatory Diseases
79.	hyun	hyae jung	현해정	Daewoong Pharmaceutical Co. Ltd.	Immunology-Oncology / Autoimmune / Inflammatory Diseases
80.	Hyun	Byung Hwa	현병화	KAIST	Business Development/Venture Capital/Entrepreneurship/Legal/Consulting/Government Relations
81.	Im	Eunju	임은주	Amyloid Solution	Business Development/Venture Capital/Entrepreneurship/Legal/Consulting/Government Relations
82.	Im	Wonpil		Lehigh University	Business Development/Venture Capital/Entrepreneurship/Legal/Consulting/Government Relations
83.	Im	Saerom	임새롬	UCSD Skagg School of Pharmacy graduate	CMC / Quality Assurance / Regulatory Affairs / Project Management
84.	Jang	Hanjun	장한준	MCPHS University	Medicinal Chemistry / Drug Discovery & Delivery / Preclinical / Micro-Nanotechnology
85.	Jang	Geunhyo	장근효	NYU Langone Health	Immunology-Oncology / Autoimmune / Inflammatory Diseases
86.	Jang	Mi-Hyeon	장미현	Rutgers University	Clinical Trial & Development / Clinical Pharmacology / Biostatistics
87.	Jang	Sooyong	장수용	University of Pennsylvania	Digital Health / Bioinformatics / A.I. / Machine Learning / Quantitative Science
88.	Jang	MinJung	장민정	Weill Cornell Medicine	Medical Device/In Vitro Diagnostics/Biomedical Engineering/Analytical Method Development
89.	Jee	Sang Eun	지상은	Xtalpi Inc.	Digital Health / Bioinformatics / A.I. / Machine Learning / Quantitative Science
90.	Jeon	Pureum	전푸름	Nathan S.Kline Institute for Psychiatry Research	
91.	Jeong	Brian Byung-Cheon	정병천	CSL Seqirus R&D	Infectious Diseases / Vaccines / RNA Therapeutics
92.	Jeong	Jae Uk		GC Biopharma	Business Development/Venture Capital/Entrepreneurship/Legal/Consulting/Government Relations
93.	JEONG	HEYKYEONG	정혜경	GSK	Neurological Disorders/Alzheimer's Disease/Parkinson's Disease/Aging
94.	Jeong	Cijoon	정시준	Johns Hopkins Carey Business School	CMC / Quality Assurance / Regulatory Affairs / Project Management
95.	Jeong	Hyo-Young	정효영	Merck	Medicinal Chemistry / Drug Discovery & Delivery / Preclinical / Micro-Nanotechnology
96.	Jeong	Yu Young	정유영	Rutgers University	Neurological Disorders/Alzheimer's Disease/Parkinson's Disease/Aging
97.	Jin	Yonghwan	진용환	Samsung BioLogics	Infectious Diseases / Vaccines / RNA Therapeutics
98.	Jo	Heejin	조희진	Johns Hopkins University	Neurological Disorders/Alzheimer's Disease/Parkinson's Disease/Aging

	Last Name	First Name	한글 이름	Work	Small group networking
99.	Jo	Junyong	조준용	Merck Co., & Inc.	Medicinal Chemistry / Drug Discovery & Delivery / Preclinical / Micro-Nanotechnology
100.	Jo	Ukhyun	조욱현	National Cancer Institute/NIH	Medicinal Chemistry / Drug Discovery & Delivery / Preclinical / Micro-Nanotechnology
101.	Jo	YoungJu	조영주	Stanford University	Neurological Disorders/Alzheimer's Disease/Parkinson's Disease/Aging
102.	Jun	Inyoung	전인영	University of Florida	Digital Health / Bioinformatics / A.I. / Machine Learning / Quantitative Science
103.	Jung	Hyun Jin		Columbia University	Clinical Trial & Development / Clinical Pharmacology / Biostatistics
104.	Jung	Hyunkyung	정현경	Medic Life Sciences	Medicinal Chemistry / Drug Discovery & Delivery / Preclinical / Micro-Nanotechnology
105.	Jung	Jaeyong	정재용	Rutgers University	Immunology-Oncology / Autoimmune / Inflammatory Diseases
106.	Jung	Dahee	정다희	University of Illinois at Chicago	Clinical Trial & Development / Clinical Pharmacology / Biostatistics
107.	Jung	Taeyoon		University of Washington	Medicinal Chemistry / Drug Discovery & Delivery / Preclinical / Micro-Nanotechnology
108.	Kang	Jimin	강지민	Boston Children's Hospital	Medicinal Chemistry / Drug Discovery & Delivery / Preclinical / Micro-Nanotechnology
109.	Kang	Hahn	강한	Boston College	Digital Health / Bioinformatics / A.I. / Machine Learning / Quantitative Science
110.	Kang	Soo Im	강수임	Columbia University Irving Medical Center	Digital Health / Bioinformatics / A.I. / Machine Learning / Quantitative Science
111.	Kang	Min-Suk	강민석	Columbia University Medical Center	Neurological Disorders/Alzheimer's Disease/Parkinson's Disease/Aging
112.	Kang	Jongkyun		Harvard Medical School/BWH	Neurological Disorders/Alzheimer's Disease/Parkinson's Disease/Aging
113.	kang	jinsuk	강진석	JW 중외제약	Immunology-Oncology / Autoimmune / Inflammatory Diseases
114.	Kang	Ellen	강현수	Mount Sinai Hospital	Digital Health / Bioinformatics / A.I. / Machine Learning / Quantitative Science
115.	Kang	Young-Jin	강영진	PTC Therapeutics	
116.	Kang	Pilsoo	강필수	Sanofi	CMC / Quality Assurance / Regulatory Affairs / Project Management
117.	Kang	Jea Woo		University of Wisconsin-Madison	Neurological Disorders/Alzheimer's Disease/Parkinson's Disease/Aging
118.	KEUM	BO RAM	금보람	CVS	Digital Health / Bioinformatics / A.I. / Machine Learning / Quantitative Science
119.	Kim	Kyung	김경효	AbbVie	Neurological Disorders/Alzheimer's Disease/Parkinson's Disease/Aging
120.	Kim	Lauren	김지은	AbbVie	
121.	Kim	Elaine	김정은	AbbVie Inc.	Clinical Trial & Development / Clinical Pharmacology / Biostatistics
122.	Kim	Daegun	김대건	ACTNOVA	Business Development/Venture Capital/Entrepreneurship/Legal/Consulting/Government Relations
123.	Kim	Dongyeop	김동엽	AITRICS	Digital Health / Bioinformatics / A.I. / Machine Learning / Quantitative Science
124.	KIM	JINWOO	김진우	Akebia Therapeutics	
125.	Kim	SungKwon		Alexion Pharmaceuticals	Immunology-Oncology / Autoimmune / Inflammatory Diseases
126.	Kim	Sahee	김사희	ALK-Abello Pharmaceuticals	Immunology-Oncology / Autoimmune / Inflammatory Diseases

	Last Name	First Name	한글 이름	Work	Small group networking
127.	Kim	Uriah	Kim Sehee	Bristol Myers Squibb	Business Development/Venture Capital/Entrepreneurship/Legal/Consulting/Government Relations
128.	Kim	Seung Tea	김성태	Cold Spring Harbor Laboratory, Stony Brook University	Cell and Gene Therapy / Rare Diseases
129.	Kim	Sungsoo	김성수	Columbia University	Medicinal Chemistry / Drug Discovery & Delivery / Preclinical / Micro-Nanotechnology
130.	Kim	Chiho	김치호	Columbia University Irving Medical Center	Immunology-Oncology / Autoimmune / Inflammatory Diseases
131.	Kim	Yoonseon	김윤선	Corestemchemon US	Medicinal Chemistry / Drug Discovery & Delivery / Preclinical / Micro-Nanotechnology
132.	Kim	Youngchul	김영철	Corestemchemon US Inc.	Medicinal Chemistry / Drug Discovery & Delivery / Preclinical / Micro-Nanotechnology
133.	Kim	Ssirai		Eli Lilly and Company	Business Development/Venture Capital/Entrepreneurship/Legal/Consulting/Government Relations
134.	Kim	Sungtae	김성태	GLAXOSMITHKLINE	Immunology-Oncology / Autoimmune / Inflammatory Diseases
135.	Kim	Jaegil	김재길	GSK	Digital Health / Bioinformatics / A.I. / Machine Learning / Quantitative Science
136.	Kim	Jun Yong	김준용	Harvard medical school	Business Development/Venture Capital/Entrepreneurship/Legal/Consulting/Government Relations
137.	Kim	Taeg		HotSpot Therapeutics	
138.	KIM	DONGWOO	김동우	iN Therapeutics	Medicinal Chemistry / Drug Discovery & Delivery / Preclinical / Micro-Nanotechnology
139.	Kim	Jae-choon	김 재 춘	Incheon Technopark	Medical Device/In Vitro Diagnostics/Biomedical Engineering/Analytical Method Development
140.	Kim	Hyun Seok	김현석	IVIM Technology	Neurological Disorders/Alzheimer's Disease/Parkinson's Disease/Aging
141.	Kim	Soon Ok	김순옥	Johnson & Johnson	Metabolic Diseases / Cardiovascular / Diabetes / Respiratory Diseases
142.	Kim	Jinah	김진아	KHIDI USA	
143.	Kim	Georgina	김은겸	KOTRA	Business Development/Venture Capital/Entrepreneurship/Legal/Consulting/Government Relations
144.	Kim	Seonghan		Lehigh University	Medicinal Chemistry / Drug Discovery & Delivery / Preclinical / Micro-Nanotechnology
145.	Kim	Sung ki	김성기	Massachusetts General Hospital	Medicinal Chemistry / Drug Discovery & Delivery / Preclinical / Micro-Nanotechnology
146.	Kim	Sangeon	김상언	MCPHS	CMC / Quality Assurance / Regulatory Affairs / Project Management
147.	Kim	Dasom	김다솜	Memorial Sloan Kettering/Weill Cornell Medicine	Immunology-Oncology / Autoimmune / Inflammatory Diseases
148.	Kim	Najung	김나정	MIT Corporate Relations	Business Development/Venture Capital/Entrepreneurship/Legal/Consulting/Government Relations
149.	KIM	SEUNGYEON	김승연	Nano-Ditech Corp.	Medical Device/In Vitro Diagnostics/Biomedical Engineering/Analytical Method Development

	Last Name	First Name	한글 이름	Work	Small group networking
150.	Kim	Tae Sung		National Institute of Dental and Craniofacial Research	Immunology-Oncology / Autoimmune / Inflammatory Diseases
151.	Kim	Yoseph	김요셉	Optosurgical, LLC	Business Development/Venture Capital/Entrepreneurship/Legal/Consulting/Government Relations
152.	Kim	Hyelim		PineTree Therapeutics	CMC / Quality Assurance / Regulatory Affairs / Project Management
153.	Kim	Bumjun	김범준	Princeton University	Cell and Gene Therapy / Rare Diseases
154.	Kim	Geun Hyang	김근향	Regeneron	Clinical Trial & Development / Clinical Pharmacology / Biostatistics
155.	Kim	Byungchul	김병철	Regeneron Pharmaceuticals	CMC / Quality Assurance / Regulatory Affairs / Project Management
156.	Kim	Jinrang	김진랑	Regeneron Pharmaceuticals	Metabolic Diseases / Cardiovascular / Diabetes / Respiratory Diseases
157.	Kim	Young Woo	김 영우	Retired	Medical Device/In Vitro Diagnostics/Biomedical Engineering/Analytical Method Development
158.	Kim	Yoon-Seong	김윤성	Robert Wood Johnson Medical School at Rutgers University	Neurological Disorders/Alzheimer's Disease/Parkinson's Disease/Aging
159.	Kim	Hyunkyung		Rogosin Institute	Immunology-Oncology / Autoimmune / Inflammatory Diseases
160.	Kim	Min-Jeong	김민정	Stony Brook University School of Medicine	Neurological Disorders/Alzheimer's Disease/Parkinson's Disease/Aging
161.	Kim	Dongwook	김동욱	Technical Resources International	Immunology-Oncology / Autoimmune / Inflammatory Diseases
162.	Kim	Hyoung	김형하	Univ. Pennsylvania	
163.	Kim	Aaron	김태환	University of Massachusetts Amherst	Medicinal Chemistry / Drug Discovery & Delivery / Preclinical / Micro-Nanotechnology
164.	Kim	Yeseul	김예슬	University of Pennsylvania	
165.	Kim	Nam Cheol		USP	Business Development/Venture Capital/Entrepreneurship/Legal/Consulting/Government Relations
166.	Kim	Nayun	김나윤	Washington University in St. Louis	Medical Device/In Vitro Diagnostics/Biomedical Engineering/Analytical Method Development
167.	kim	Byungchan	김병찬	Xtalpi Inc	Neurological Disorders/Alzheimer's Disease/Parkinson's Disease/Aging
168.	Kim	Yeongho	김영호	Yale School of Medicine	Medicinal Chemistry / Drug Discovery & Delivery / Preclinical / Micro-Nanotechnology
169.	KIM	SANGHUN	김상헌	Yale school of medicine	Metabolic Diseases / Cardiovascular / Diabetes / Respiratory Diseases
170.	Kim	Hyojin	김효진	Yale University	Neurological Disorders/Alzheimer's Disease/Parkinson's Disease/Aging
171.	Kim	Hongil		Yale University	Infectious Diseases / Vaccines / RNA Therapeutics
172.	Kim Lundin	Sori	김소리	The University of Texas Health Science Center at Houston	Digital Health / Bioinformatics / A.I. / Machine Learning / Quantitative Science
173.	Kimko	Holly	고희종	AstraZeneca	Clinical Trial & Development / Clinical Pharmacology / Biostatistics
174.	Ko	Yeunjung	고연정	Baylor College of Medicine	Immunology-Oncology / Autoimmune / Inflammatory Diseases

	Last Name	First Name	한글 이름	Work	Small group networking
175.	Ko	Eun Kyung	고은경	UPenn	Infectious Diseases / Vaccines / RNA Therapeutics
176.	Kwak	Heechun		GC Biopharma	Immunology-Oncology / Autoimmune / Inflammatory Diseases
177.	Kwon	Se Chang	권세창	CHA Bio Group	Medicinal Chemistry / Drug Discovery & Delivery / Preclinical / Micro-Nanotechnology
178.	Kwon	Kyenghee	권경희	Dongguk University	Business Development/Venture Capital/Entrepreneurship/Legal/Consulting/Government Relations
179.	KWON	HYUNJUNG	권현정	KAIST	Business Development/Venture Capital/Entrepreneurship/Legal/Consulting/Government Relations
180.	Kwon	Minji	권민지	KHIDI USA	Digital Health / Bioinformatics / A.I. / Machine Learning / Quantitative Science
181.	Kwon	Soonbum	권순범	Merck	Immunology-Oncology / Autoimmune / Inflammatory Diseases
182.	Kwon	Nayoung	권나영	Yale University	Cell and Gene Therapy / Rare Diseases
183.	Kwon	Dong-il	권동일	Yale University	Infectious Diseases / Vaccines / RNA Therapeutics
184.	Lee	Seung Joon	이승준	Biogen	Neurological Disorders/Alzheimer's Disease/Parkinson's Disease/Aging
185.	Lee	Hong-Gyun	이홍균	Brigham and Women's Hospital/ Harvard Medical School	Immunology-Oncology / Autoimmune / Inflammatory Diseases
186.	Lee	JangEun	이장은	Bristol Myers Squibb	Immunology-Oncology / Autoimmune / Inflammatory Diseases
187.	Lee	Seungkyu	이승규	Bristol Myers Squibb	Neurological Disorders/Alzheimer's Disease/Parkinson's Disease/Aging
188.	Lee	Bom Nae Rin	이봄내린	Cornell University	Infectious Diseases / Vaccines / RNA Therapeutics
189.	Lee	Nancy		ExoRenal	CMC / Quality Assurance / Regulatory Affairs / Project Management
190.	Lee	Jake	이경수	Exorenal Inc	Medical Device/In Vitro Diagnostics/Biomedical Engineering/Analytical Method Development
191.	Lee	Sangwon	이상원	FDA	Medical Device/In Vitro Diagnostics/Biomedical Engineering/Analytical Method Development
192.	Lee	Tina	TINA E LEE	GSK	CMC / Quality Assurance / Regulatory Affairs / Project Management
193.	Lee	Yang	이양	GSK	Medicinal Chemistry / Drug Discovery & Delivery / Preclinical / Micro-Nanotechnology
194.	Lee	Joan	이윤지	Hikma Pharmaceuticals USA, Inc.	Clinical Trial & Development / Clinical Pharmacology / Biostatistics
195.	Lee	YouKyung	이유경	Icahn school of medicine at Mount Sinai	Neurological Disorders/Alzheimer's Disease/Parkinson's Disease/Aging
196.	Lee	Jong Seok	이종석	IVY Pharma	Business Development/Venture Capital/Entrepreneurship/Legal/Consulting/Government Relations
197.	Lee	Huijin		Johns Hopkins School of Medicine	Medicinal Chemistry / Drug Discovery & Delivery / Preclinical / Micro-Nanotechnology
198.	Lee	Seojean	이서진	JW 홀딩스	Immunology-Oncology / Autoimmune / Inflammatory Diseases
199.	Lee	JongJoo	이종주	Kaigene Inc	Immunology-Oncology / Autoimmune / Inflammatory Diseases

	Last Name	First Name	한글 이름	Work	Small group networking
200.	LEE	YUNSUP		LG CHEM LIFE SCIENCES	Business Development/Venture Capital/Entrepreneurship/Legal/Consulting/Government Relations
201.	Lee	Grace	이성은	Matica Bio	Cell and Gene Therapy / Rare Diseases
202.	Lee	SungJin	이성진	Memorial Hermann	CMC / Quality Assurance / Regulatory Affairs / Project Management
203.	Lee	Dong Hun		Merck	CMC / Quality Assurance / Regulatory Affairs / Project Management
204.	Lee	Daeho	이대호	Montefiore Medical Center	Clinical Trial & Development / Clinical Pharmacology / Biostatistics
205.	Lee	Dooyoung	이두영	Morphic Therapeutic	Clinical Trial & Development / Clinical Pharmacology / Biostatistics
206.	Lee	Taehan	이태한	Nano-Ditech Corporation	Medical Device/In Vitro Diagnostics/Biomedical Engineering/Analytical Method Development
207.	LEE	JU-HYUN	이주현	Nathan Kline Institute/NYU Langone Medical Center	Digital Health / Bioinformatics / A.I. / Machine Learning / Quantitative Science
208.	Lee	Hyun Joon	이현준	Neuronity Therapeutics, Inc.	Neurological Disorders/Alzheimer's Disease/Parkinson's Disease/Aging
209.	Lee	Yeon-Hwa	이연화	NIH/NCI	Immunology-Oncology / Autoimmune / Inflammatory Diseases
210.	Lee	Choong Heon	이충헌	NYU Medical Center	Neurological Disorders/Alzheimer's Disease/Parkinson's Disease/Aging
211.	Lee	Shin-Ae (Grace)	이신애	Pfizer	Infectious Diseases / Vaccines / RNA Therapeutics
212.	Lee	Sang Hyun	이상현	Prelude Therapeutics	Immunology-Oncology / Autoimmune / Inflammatory Diseases
213.	Lee	Sangyoon	이상윤	Purdue University	Business Development/Venture Capital/Entrepreneurship/Legal/Consulting/Government Relations
214.	Lee	April Yunkyoung	이윤경	Regeneron	Metabolic Diseases / Cardiovascular / Diabetes / Respiratory Diseases
215.	Lee	Sunhee	최선희	Regeneron Pharmaceuticals	Neurological Disorders/Alzheimer's Disease/Parkinson's Disease/Aging
216.	LEE	SUNG WOON	이성운	RevoSketch Inc.	Medical Device/In Vitro Diagnostics/Biomedical Engineering/Analytical Method Development
217.	Lee	Kibum	이 기범	Rutgers University	Medicinal Chemistry / Drug Discovery & Delivery / Preclinical / Micro-Nanotechnology
218.	Lee	James	이석호	Sanofi	Business Development/Venture Capital/Entrepreneurship/Legal/Consulting/Government Relations
219.	LEE	KWAN HO	이관호	UC Davis	Clinical Trial & Development / Clinical Pharmacology / Biostatistics
220.	Lee	Se-Hwan	이세환	University of Pennsylvania	Medical Device/In Vitro Diagnostics/Biomedical Engineering/Analytical Method Development
221.	Lee	Jongwon	이종원	University of Pittsburgh	Neurological Disorders/Alzheimer's Disease/Parkinson's Disease/Aging
222.	Lee	Jeong Hyo	이정효	University of Wisconsin-Madison	Immunology-Oncology / Autoimmune / Inflammatory Diseases
223.	Lee	Songmi	이송미	UT Health Science Center Houston	Neurological Disorders/Alzheimer's Disease/Parkinson's Disease/Aging

	Last Name	First Name	한글 이름	Work	Small group networking
224.	Lee	Jooyoung	이주영	Vertex Pharmaceuticals Incorporated	Cell and Gene Therapy / Rare Diseases
225.	Lee	Hyuncheol	이현철	Vivere Tx	Business Development/Venture Capital/Entrepreneurship/Legal/Consulting/Government Relations
226.	Lee	Uk Jin	이욱진	Weill Cornell Medical College	Cell and Gene Therapy / Rare Diseases
227.	Lee	Hyunmin	이현민	Yale university	
228.	Lim	Ha Eun	임하은	Rice University	Cell and Gene Therapy / Rare Diseases
229.	Lim	Jaehyun	임재현	TeraImmune/Baudax Bio	CMC / Quality Assurance / Regulatory Affairs / Project Management
230.	Min	Ji-Young	민지영	GSK	Clinical Trial & Development / Clinical Pharmacology / Biostatistics
231.	Min	Kyunghyun	민경현	Kaigene	Immunology-Oncology / Autoimmune / Inflammatory Diseases
232.	Min	Jiho	민지호	MCPHS	Clinical Trial & Development / Clinical Pharmacology / Biostatistics
233.	Min	Jaehee	민재희	MCPHS	Medical Device/In Vitro Diagnostics/Biomedical Engineering/Analytical Method Development
234.	Moon	Daniel		BL&H USA LLC	Immunology-Oncology / Autoimmune / Inflammatory Diseases
235.	MOON	YOUNG	문영수	BL&H USA LLC	Immunology-Oncology / Autoimmune / Inflammatory Diseases
236.	MUNKEE	CHOI	최문기	KAIST	Business Development/Venture Capital/Entrepreneurship/Legal/Consulting/Government Relations
237.	Nam	Yoonhee	남윤희	Columbia University	Digital Health / Bioinformatics / A.I. / Machine Learning / Quantitative Science
238.	Nam	JungSeung	남정승	Columbia University Medical Center	Medicinal Chemistry / Drug Discovery & Delivery / Preclinical / Micro-Nanotechnology
239.	Nam	Minwoo	남민우	New York University Grossman School of Medicine	Immunology-Oncology / Autoimmune / Inflammatory Diseases
240.	Oh	Jae Won	오재원	Harvard	Neurological Disorders/Alzheimer's Disease/Parkinson's Disease/Aging
241.	Oh	Hanna	오한나	MCPHS University	CMC / Quality Assurance / Regulatory Affairs / Project Management
242.	Oh	Daniel	오선호	Osteogene	Business Development/Venture Capital/Entrepreneurship/Legal/Consulting/Government Relations
243.	Oh	Justin	오연삼	Shaperon Inc.	Immunology-Oncology / Autoimmune / Inflammatory Diseases
244.	Oh	Sungho	오성호	University of Pennsylvania School of Nursing	Medical Device/In Vitro Diagnostics/Biomedical Engineering/Analytical Method Development
245.	Paik	Ik-Hyeon	백익현	WAVE Life Sciences, Inc.	Medicinal Chemistry / Drug Discovery & Delivery / Preclinical / Micro-Nanotechnology
246.	Park	Min		Aton Biotech	Business Development/Venture Capital/Entrepreneurship/Legal/Consulting/Government Relations
247.	Park	Keerang	박기랑	CdmoGen Co., Ltd.	Cell and Gene Therapy / Rare Diseases
248.	Park	Sunjae	박선재	Columbia University	Medicinal Chemistry / Drug Discovery & Delivery / Preclinical / Micro-Nanotechnology

	Last Name	First Name	한글 이름	Work	Small group networking
249.	Park	Jimyung	박지명	Columbia University Irving Medical Center	Digital Health / Bioinformatics / A.I. / Machine Learning / Quantitative Science
250.	Park	Haram	박하람	Columbia University Irving Medical Center	Immunology-Oncology / Autoimmune / Inflammatory Diseases
251.	Park	Hye-Jin	박혜진	CUNY-ASRC	Neurological Disorders/Alzheimer's Disease/Parkinson's Disease/Aging
252.	Park	Sehyun	박세현	CVS Health	CMC / Quality Assurance / Regulatory Affairs / Project Management
253.	PARK	SEUNGKOOK	박승국	Daewoong Pharmaceutical Co. Ltd.	Immunology-Oncology / Autoimmune / Inflammatory Diseases
254.	Park	Eunkyung	박은경	Daewoong Pharmaceutical Co. Ltd.	Immunology-Oncology / Autoimmune / Inflammatory Diseases
255.	Park	SeolHee		Daewoong Pharmaceutical Co. Ltd.	Metabolic Diseases / Cardiovascular / Diabetes / Respiratory Diseases
256.	Park	Hanna		GC Biopharma	CMC / Quality Assurance / Regulatory Affairs / Project Management
257.	PARK	EUNCHAN	박은찬	GNT Pharma	Business Development/Venture Capital/Entrepreneurship/Legal/Consulting/Government Relations
258.	Park	Jang-June	박장준	ISU Abxis	Immunology-Oncology / Autoimmune / Inflammatory Diseases
259.	Park	Dongseok	박동석	Johns Hopkins School of Medicine	Neurological Disorders/Alzheimer's Disease/Parkinson's Disease/Aging
260.	PARK	CHAN HEE	박찬희	JW 중외제약	Cell and Gene Therapy / Rare Diseases
261.	PARK	SOONMAHN		Korea Health Industry Development Institute	
262.	Park	Tae-Yoon	박태윤	McLean Hospital / Harvard Medical School	Neurological Disorders/Alzheimer's Disease/Parkinson's Disease/Aging
263.	Park	Jisoo	박지수	MCPHS University	Digital Health / Bioinformatics / A.I. / Machine Learning / Quantitative Science
264.	Park	JiYoung	JiYoung Park	Merck	CMC / Quality Assurance / Regulatory Affairs / Project Management
265.	Park	Seung Hun	박승훈	MGH	Medicinal Chemistry / Drug Discovery & Delivery / Preclinical / Micro-Nanotechnology
266.	Park	Min Young	박민영	NYU Langone	Metabolic Diseases / Cardiovascular / Diabetes / Respiratory Diseases
267.	Park	Jong-Duk	박종덕	Princeton University	Medicinal Chemistry / Drug Discovery & Delivery / Preclinical / Micro-Nanotechnology
268.	Park	Chan Jin		Princeton University	
269.	Park	Jung Young	박정용	Psomagen, Inc.	Infectious Diseases / Vaccines / RNA Therapeutics
270.	Park	Ji Sun	박지선	Regeneron Pharmaceuticals	Clinical Trial & Development / Clinical Pharmacology / Biostatistics
271.	Park	Yejin	박예진	Rutgers Pharmaceutical Industry Fellowships	Business Development/Venture Capital/Entrepreneurship/Legal/Consulting/Government Relations
272.	Park	Juhyung	박주형	Stanford	Medicinal Chemistry / Drug Discovery & Delivery / Preclinical / Micro-Nanotechnology
273.	Park	Dong Jun	박동준	University of California San Diego	Cell and Gene Therapy / Rare Diseases
274.	PARK	YOONJEONG		UPENN	Metabolic Diseases / Cardiovascular / Diabetes / Respiratory Diseases
275.	Park	In-Hyun	박인현	Yale University	Immunology-Oncology / Autoimmune / Inflammatory Diseases

	Last Name	First Name	한글 이름	Work	Small group networking
276.	Park	Hong-Jai	박홍재	Yale University	Immunology-Oncology / Autoimmune / Inflammatory Diseases
277.	Park	Saejeong	박세정	Yale University	
278.	Park	Joon Seok	박준석	대웅제약	
279.	Rhee	So Hyun	이소현	Kite Pharma	Clinical Trial & Development / Clinical Pharmacology / Biostatistics
280.	Rim	Nicholas	임내균	Novartis	Clinical Trial & Development / Clinical Pharmacology / Biostatistics
281.	Roh	Yoonho	노윤호	University of Pennsylvania	Medical Device/In Vitro Diagnostics/Biomedical Engineering/Analytical Method Development
282.	RYOO	JEPHIL		Galaxy Bio/NAL Pharma	CMC / Quality Assurance / Regulatory Affairs / Project Management
283.	Ryu	Eun Ju	류은주	동아 ST USA	Cell and Gene Therapy / Rare Diseases
284.	Seo	Bojeong	서보정	Columbia University	Medicinal Chemistry / Drug Discovery & Delivery / Preclinical / Micro-Nanotechnology
285.	Seo	Stella	서형림	The University of California, San Diego	CMC / Quality Assurance / Regulatory Affairs / Project Management
286.	Seo	Hogyu	서호규	Yuhan USA	Immunology-Oncology / Autoimmune / Inflammatory Diseases
287.	Seol	YunHee	설윤희	ACTNOVA	Business Development/Venture Capital/Entrepreneurship/Legal/Consulting/Government Relations
288.	Seong	Changhyun	성창현	Regeneron Pharmaceuticals	Immunology-Oncology / Autoimmune / Inflammatory Diseases
289.	Shin	Minjae	신민재	Kaigene, Inc.	Immunology-Oncology / Autoimmune / Inflammatory Diseases
290.	Shin	Jiyun	신지윤	New York University School of Medicine	Business Development/Venture Capital/Entrepreneurship/Legal/Consulting/Government Relations
291.	Shin	Jihae	신지혜	PTC therapeutics	Neurological Disorders/Alzheimer's Disease/Parkinson's Disease/Aging
292.	Sohn	Nicholas	손남석	Prev. Celltrion Healthcare.	Business Development/Venture Capital/Entrepreneurship/Legal/Consulting/Government Relations
293.	SON	GA-YEON	손가연	NYU College of Dentistry	Digital Health / Bioinformatics / A.I. / Machine Learning / Quantitative Science
294.	Son	Jae Hak	손재학	Rutgers University	Digital Health / Bioinformatics / A.I. / Machine Learning / Quantitative Science
295.	Son	Jimin	손지민	TBA	Immunology-Oncology / Autoimmune / Inflammatory Diseases
296.	Song	Saera	송세라	Enceladus Bio	
297.	Song	Jinyeop	송진엽	MIT	Digital Health / Bioinformatics / A.I. / Machine Learning / Quantitative Science
298.	Song	Joo-Hye	송주혜	Sanofi	Immunology-Oncology / Autoimmune / Inflammatory Diseases
299.	Song	Eun Sun	송은선	Stanford University	Digital Health / Bioinformatics / A.I. / Machine Learning / Quantitative Science
300.	Song	Saeheum		큐어세라퓨틱스	Cell and Gene Therapy / Rare Diseases
301.	Suh	K. Stephen	Kwangsun Suh	DiagnoCine	Medicinal Chemistry / Drug Discovery & Delivery / Preclinical / Micro-Nanotechnology
302.	Suh	Junghyun	이정현	GSK	Medicinal Chemistry / Drug Discovery & Delivery / Preclinical / Micro-Nanotechnology

	Last Name	First Name	한글 이름	Work	Small group networking
303.	Suh	Sandy		Recordati Rare Disease	CMC / Quality Assurance / Regulatory Affairs / Project Management
304.	Suh	Hanbin	서한빈	TeleMed Systems	Medical Device/In Vitro Diagnostics/Biomedical Engineering/Analytical Method Development
305.	Wang	Chanung	왕찬웅	Regeneron Pharmaceuticals	Neurological Disorders/Alzheimer's Disease/Parkinson's Disease/Aging
306.	Whang	Ken	황광연	Nexel USA	Cell and Gene Therapy / Rare Diseases
307.	Won	Jonghoon	원종훈	Amway	Clinical Trial & Development / Clinical Pharmacology / Biostatistics
308.	Woo	Yelim	우예림	Boston University	Cell and Gene Therapy / Rare Diseases
309.	Yang	Natalie		Dio Medical Corp	Digital Health / Bioinformatics / A.I. / Machine Learning / Quantitative Science
310.	Yang	Sungyun	양승윤	Massachusetts Institute of Technology	Metabolic Diseases / Cardiovascular / Diabetes / Respiratory Diseases
311.	Yang	Kyung-Min	양경민	Medpacto Therapeutics	
312.	Yang	Isabella	양예원	St. John's University	
313.	Yeon	Minjeong	연민정	The Wistar Institute	Immunology-Oncology / Autoimmune / Inflammatory Diseases
314.	YOO	JEEMIN		Northeastern University	CMC / Quality Assurance / Regulatory Affairs / Project Management
315.	Yoo	Byungkuk	유병국	Thermo Fisher Scientific	Medicinal Chemistry / Drug Discovery & Delivery / Preclinical / Micro-Nanotechnology
316.	YOO	SEUNGHO	유승호	YOUTH BIO GLOBAL	Cell and Gene Therapy / Rare Diseases
317.	YOON	ILSANG	윤일상	BIORCHESTRA, Co. LTD.	Neurological Disorders/Alzheimer's Disease/Parkinson's Disease/Aging
318.	Yoon	OhKyu	윤오규	Gilead Sciences	Digital Health / Bioinformatics / A.I. / Machine Learning / Quantitative Science
319.	Yoon	Annie	윤현진	MCPHS	Clinical Trial & Development / Clinical Pharmacology / Biostatistics
320.	Yoon	Deok Yong	윤덕용	Novartis	Clinical Trial & Development / Clinical Pharmacology / Biostatistics
321.	Yoon	Jaeyon		SK Pharmteco	CMC / Quality Assurance / Regulatory Affairs / Project Management
322.	YOOSHIN	HUR	허유신	KAIST	Business Development/Venture Capital/Entrepreneurship/Legal/Consulting/Government Relations
323.	Yu	Jiyeon	유지연	GSK	Immunology-Oncology / Autoimmune / Inflammatory Diseases
324.	Yu	Chongwoo	유종우	US Food and Drug Administration	Clinical Trial & Development / Clinical Pharmacology / Biostatistics
325.	YUN	TAEJIN	윤태진	NYU	Immunology-Oncology / Autoimmune / Inflammatory Diseases

KASBP

Korean American Society in Biotech and Pharmaceuticals
재미한인제약인협회

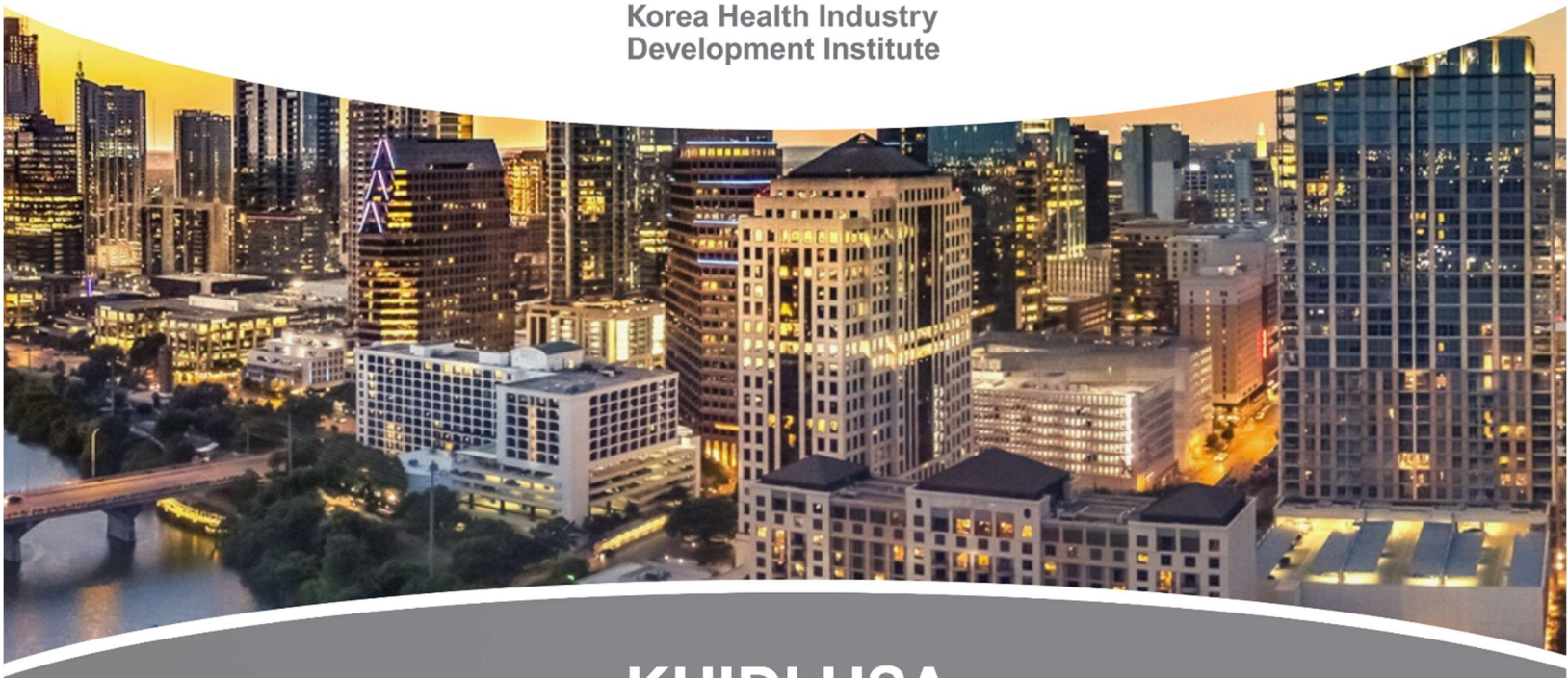
Announcing 2024 SPRING SYMPOSIUM

KASBP is headed to Boston, MA in the Spring.
May 31st - June 1st, 2024


혁신신약 개발에 도전합니다
생명존중과 개척정신의 창업이념을 바탕으로 달려온 70여 년의 쉽지 않았던 시간들.
어떤 것보다 생명을 살리는 치료제 개발을 위해 언 길을 들어왔습니다.
국내 최초 수액제 개발부터 암, 이로치, 탈모, 통증치료제의 연구개발까지
JW는 '인류가 불가능하다고 생각했던 혁신신약 개발'에 끊임없이 도전하고 있습니다.
전세계인이 건강하고 행복할 그날까지, 우리의 도전은 계속될 것입니다.
JW 그룹
JW홀딩스 JW중외제약 JW신약 JW생명과학 JW메디칼 JW바이오사이언스 JW생활건강


Matica
BIOTECHNOLOGY
Manufacturing Breakthroughs
Make It Happen
With Matica Bio
Cell & Gene Therapy Manufacturing from Development to Commercialization

KHIDI
Korea Health Industry Development Institute



KHIDI USA

Promoting Healthcare Industry

KHIDI USA helps acquire overseas authorization and to facilitate the US expansion of Korean Companies and institutions in the healthcare industry by serving as a bridge between Korea and the US.

US MAREKT ENTRY SUPPORT

KHIDI USA helps Healthcare companies overcome the challenges they could face in a new market which often include language/cultural barrier, lack of market knowledge, and regulatory challenges.

INVESTMENT SUPPORT

With US market insights and a vast network of healthcare companies and service providers in both Korea and the US, KHIDI USA can support and connect those seeking investment opportunities in Korea or the US.

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"제약회사가 할 수 있는 최고의 사회공헌은 신약개발이다"

왜, 동아쏘시오그룹은 수십년 동안 끝없는 암의 비밀을 풀고있는 걸까?

아직도 완치의 희망을 놓지 않는 수많은 암환자와 가족들의 간절함을 알기에 동아쏘시오그룹은 연구실의 불을 끌 수가 없습니다.

암보다도 더 고통스럽다는 항암 치료, 많은 좋은 약이 개발되고 있지만 암은 아직도 풀지 못한 인류의 가장 큰 숙제입니다.
지난 수십 년 동안 신약개발에 앞장서온 동아쏘시오그룹은 생명연장과 완치를 위해 면역항암에 기초한 신약개발에 노력을 기울이고 있습니다.
2016년 애브비와 면역항암제 기술 수출 및 공동연구 계약,
2017년 아스트라제네카와 공동연구개발 계약 등
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1 2년 연속 신약 승인 및 발매 (국내 최초)

34호 신약

FEXUCLUE
Fexuprazan hydrochloride

- 시판 승인: 2021.12.30
- 국내 발매: 2022.07.01

36호 신약

Envlo
Enavogliflozin 0.3mg

- 시판 승인: 2022.11.30
- 국내 발매: 2023.05.01

2 글로벌 신약 기술수출 (4년간 2.5조원 규모)

DWP213388 자가면역 (ITK/BTK 저해제)

- Aditum Bio
- 2023.4 ($470M)

Bersiporocin IPF (PRS 저해제)

- CS Pharma (중화권)
- 2023.1 ($336M)

펙수클루/엔블로 (P-CAB/SGLT2 저해제)

	기술	계약상대방	대상지역	총 계약규모
2020년 8월	펙수프라잔 위식도역류질환 치료제	EMS	브라질	7248만 달러
2021년 3월	펙수프라잔 위식도역류질환 치료제	Shanghai Haini Pharmaceutical	중국	3억3955만 달러
2021년 6월	펙수프라잔 위식도역류질환 치료제	Neurogastrx	미국, 캐나다	4억3000만 달러
2023년 2월	엔블로 당뇨병 치료제	Moksha8	멕시코, 브라질	8297만 달러

3 탄탄한 신약 파이프라인 구축