

Symposium Program

Bio, medical, pharmacology [BMP]

Symposium Chair: Young-Sup Yoon (Emory)

Co-Chairs: Woongyang Park (Sunggyunkwan University), In-Hyun Park (Yale University)

Thursday, August 10, 2017

August 10 Thursday, 8:00-9:40AM, Room: Washington B

BMP-A. Neuroscience

Co-Chairs: Sangwon F Kim (Johns Hopkins University), In-Hyun Park (Yale University)

Time	Title and Authors
8:00 AM	The role of lipid on neuronal function Sangwon F Kim (Johns Hopkins University)
8:20 AM	Interplay between mental disorder risk factor and PV interneuron circuit results in excitation/inhibition imbalance Eunchai Kang (Johns Hopkins University)
8:35 AM	GPR110 signaling in omega-3 fatty acid-derived neurodevelopment and neuroprotection Hee-Yong Kim (Laboratory of Molecular Signaling, NIAAA)
8:50 AM	Lag3 mediates cell-to-cell transmission of alpha-synuclein pathology Han Seok Ko (Johns Hopkins University)
9:05 AM	Reprogramming and Rett syndrome In-Hyun Park (Yale University)
9:20 AM	Imaging primary sensory neurons in vivo for somatosensory research Yu Shin Kim (University of Texas Medical Branch, Galveston)

August 10 Thursday, 8:00-9:40AM, Room: Ballroom B

BMP-B Session: Cancer Biology

Co-Chairs: Woongyang Park (Samsung Genome Institute), Eunjung Lee (Harvard Medical School)

8:00 AM	The quest for hidden cancer mechanisms for precision medicine Eunjung (Alice) Lee (Harvard Medical School)
8:20 AM	Mutational Signature in Cancer Genomes: DNA Damages and Repairs Jaegil Kim (Broad Institute of Harvard and MIT)
8:35 AM	Comprehensive molecular and immune profiling of non-small cell lung cancer and matched distant metastases suggests distinct molecular mechanisms underlying metastasis in different patients Won-chul Lee (The University of Texas MD Anderson Cancer Center)
8:50 AM	Genomic alterations in function regions for cancer genomes Youngsook (Lucy) Jung (Harvard Medical School)
9:05 AM	Structured component based analysis of integrating miRNA-mRNA data Taesung Park (Seoul National University)
9:20 AM	Integrated analysis of clinical and genomic data for precision cancer medicine Woongyang Park (Samsung Genome Institute)

August 10 Thursday, 1:20-3:20M, Room: Washington B

BMP-C Session: Systems Biology/Informatics

Co-Chairs Jonghwan Kim (Univ. Texas Austin), Youngseok Ju (KAIST)

1:20 PM	First somatic mutations in human life reveal asymmetric cellular dynamics in the early embryo Youngseok Ju (KAIST)
1:40 PM	Genome evolution in the allotetraploid frog <i>Xenopus laevis</i>: A new model to study aneuploidy in human diseases Taejoon Kwon (UNIST)
2:00 PM	A Computational Approach Identified Anti-diabetic Rosiglitazone Regulates mRNA Stability Kyoung Jae Won (UPenn)
2:20 PM	Activity-dependent gene expression program underlying neural functions Taekyung Kim (UT Southwestern)
2:40 PM	Non-random distribution of CpG islands directs chromosomal architectures Samuel Beck (MDI Biological Institute)

August 10 Thursday, 1:20-3:20 PM, Room: Washington A
BMP/BME Joint Session: Exosome Biology and Engineering for Medicine
Co-Chairs: Chulhee Choi (KAIST), Bong Hwan Sung (Vanderbilt University)

1:20 PM	Exosome secretion promotes directional migration of cancer cells in a gradient of chemoattractant Bong Hwan Sung (Vanderbilt University)
1:40 PM	Feto-Placental Exosomes in Parturition: Characterization, Trafficking and Functional Role Ramkumar Menon (University of Texas Medical Branch at Galveston)
2:00 PM	Increased CYP2E1 and P450 isoforms in exosomes of alcohol-exposed rodents and human alcoholics via oxidative and ER stress Young Eun Cho (NIH/NIAAA)
2:20 PM	Inhibition of exosome secretion in cancer cells by a drug Moon-Chang Baek (Kyungpook National University)
2:40 PM	Harnessing intercellular transfer of exosomes to improve drug delivery Ji-Ho Park (KAIST)
3:00 PM	Exosome engineering for protein delivery via optogenetic approach Chulhee Choi (KAIST)

August 10 Thursday, 1:20-3:20M, Room: Conference Theater
BMP/BME Session: Speed Talk
Co-Chairs for BME: YongTae Kim (Georgia Tech), Kyung-Ho Roh (U of Alabama at Huntsville)
Co-Chairs for BMP: Changwon Park (Emory University), Sang-Ho Lee (Emory University), Ji Woong Han (Emory University)

	BME Speed Talk
1:30 PM	Tissue-engineered Skeletal Muscle for Studying Atrophy in Space Peter Lee (Ohio State University)
1:45 PM	Force-Transmission in Nascent Adhesions with Associations of Talin, Vinculin and Paxillin Sangyoon Han (UT Southwestern)
1:50 PM	Nano-Plasmonic Exosome (nPLEX) Analysis for Molecular Diagnostics Hyungsoon Im (MGH, Harvard Medical School)
1:55 PM	Actively Controlled Zonation of Primary Rat/Human Hepatocytes in Various Liver Metabolisms Using a Gradient Microfluidic Device Jinsu Eo (MGH, Harvard Medical School)
2:00 PM	Identification of the common regulatory network Man-Sun Kim (Chungnam National University)

	BMP Speed Talk
2:05 PM	Non-invasive Optical Imaging of Multiple Myeloma Bone Disease by Targeting Collagen Degradation Ikjae Shin (UAMS)
2:10 PM	Stargazer: a program for calling star alleles with structural variation for pharmacogenes from next-generation sequencing data using CYP2D6 as a model Seung-been Lee (University of Washington)
2:20 PM	Therapeutic Approach using MRI-guided Focused Ultrasound for Biothreats Ji Hyun Lee (Uniformed Services University)
2:35 PM	CYP2E1 regulation of alcohol-induced miRNAs Je-Hyun Yoon (Medical University of South Carolina)
2:40 PM	Critical Role of Histone Deacetylase 3 for Acute Adaptive Thermogenesis in Brown Adipose Tissue Hee-Woong Lim (Univ. Penn)
2:45 PM	C1q regulates macrophage polarization and inflammation resolution Myoungsun Son (Northwell)
2:50 PM	Axonal Transport Defects in Drosophila Model of C9-ALS Hyun Sung (JHMI)

August 10 Thursday, 3:40-5:40 PM, Room: Washington A

BMP/BME Joint Session on Drug Development

Co-Chairs: Ick Chan Kwon (KIST) and Tae Gyu Lee (KBio Health)

3:40 PM	Welcoming remarks Kyung Sun (Chairman, Osong Medical Innovation Foundation)
3:45 PM	Strategies for New Drug Development Tae Gyu Lee (Director, New Drug Development Center, KBio Osong Medical Innovation Center)
4:10 PM	Molecular Imaging with Theragnostic Nanoparticles Ick Chan Kwon (KIST)
4:35 PM	Alternative (non-animal) methods in hepatotoxicity using 3D cell culture Sanghun Kim (KIST)
5:00 PM	The Development of Coronary Artery Stents in CNUH: Introduction of National Cardiovascular Center Youngkeun Ahn (Chonnam National University Hospital)
5:25 PM	MicroRNA Inhibitors in Nanoparticles as Targeted Therapeutics for Atherosclerosis Hanjoong Jo (Emory and Georgia Tech)

August 11 Thursday, 3:40-5:40 PM, Room: Tide Water I

MAS/BME/BMP Interdisciplinary Session: Mathematical Aspects of Biology and Biomedical Engineering: Modeling, Simulation, and Analysis

Co-Chairs: Yeona Kang (Cornell), Co-Chair: In-Hyun Park (Yale)

3:40 PM	Comparison to in vivo Image Analysis Techniques to Confirm Abnormal Microglial Activation in Multiple Sclerosis Yeona Kang (Cornell Univ)
4:00 PM	Social status-dependent habituation in zebrafish Choongseok Park (NC A&T State Univ) & Sungwoo Ahn, Ph.D (East Carolina Univ)
4:20 PM	A computational study on the mechanism of Epithelial cell polarization during the cell division Myles Kim (Florida Polytechnic Univ)

4:40 PM	A Mathematical Model of Calcium Crosstalk between the ER and Mitochondria Jung-Min Han (National Institute of Health)
5:00 PM	A Mathematical Structure of Diabetes on a Slow Manifold Joon Ha (National Institute of Health)
5:20 PM	Polymorphic transformation of rotating bacterial flagella in a viscous fluid Sookkyung Lim (University of Cincinnati)
August 10 Thursday, 5:40-9:00PM	
Banquet	

Friday, August 11, 2017

August 11 Friday, 8:00-9:40M, Room: Washington

BMP-D Session: Diabetes

Co-Chairs: Jeonga Kim (University of Alabama at Birmingham), In-Kyun Lee (Kyungbook University)

Time	Title and Authors
8:00 AM	Role of PDKs in metabolic syndrome Lee In Kyu (Kyungpook National University)
8:20 AM	FGF1 takes on new roles in metabolism and tissue homeostasis Suh Jae Myoung (KAIST)
8:40 AM	DNA-PK promotes mitochondrial, metabolic and physical decline during aging Jay H. Chung (NIH-NHLBI)
8:55 AM	Cell therapy for diabetic neurovascular complications Han Ji Woong (Emory University)
9:10 AM	A small molecule that reduces obesity through browning of adipose tissue Jeong-a Kim (University of Alabama at Birmingham)
9:25 AM	Genome Editing in hPSCs Reveals GATA6 Haploinsufficiency and a Genetic Interaction with GATA4 in Human Pancreatic Development Kihyun Lee (Cornell University)

August 11 Friday, 8:00-9:40M, Room: Conference Theater

BMP-E Session: Cardiac biology

Co-Chairs: Hee-Cheol Cho (Emory University), Youngkeun Ahn, MD, PhD (Vanderbilt University)

8:00 AM	Heart Development and Regenerative Biology Chulan Kwon (Johns Hopkins)
8:20 AM	Recovery of Myocardial Infarction via Unique Modulation of the Cardiac Microenvironment Youngkeun Ahn (Chonnam National University)
8:40 AM	Reprogramming cell fates for heart repair Young-Jae Nam (Vanderbilt University)
8:55 AM	Cardiac myocyte-fibroblast interaction and its roles in arrhythmias Bum Rak Choi (Brown University)
9:10 AM	Hardware-free cardiac pacing with genes and cells Hee Cheol Cho (Emory University)
9:25 AM	Multi-scale Biomimetic Human Cardiac Tissue Engineering for Disease Modeling and Drug Discovery

Deok-Ho Kim (University of Washington)

August 11 Friday, 1:20-3:20PM, Room: Washington A
BMP/BME Joint Session – New Drug Discovery
Co-Chairs: Gyoonee Han (Yonsei University) and Yun H. Choe (Lucas & Mercanti, LLP)

1:20 PM	KASBP - History and Impact on Korean Pharmaceutical Industry Yun H. Choe (President of KASBP/Lucas & Mercanti, LLP)
1:40 PM	Highly Selective Kinase Therapeutics for Patients with Genetically Defined Diseases Jong Sung Koh (CEO, GENOSCO Inc)
2:00 PM	Discovery of Small-Molecule Ras Destabilizer through Enhancement of the β-catenin Destruction Complex. Gyoonee Han (Yonsei University)
2:20 PM	Leukotriene B4 Receptor Antagonists for the Treatment of Intractable Respiratory Diseases Yongseok Choi (Korea University)
2:40 PM	Enabling First-in-Class Drug Discovery in the Korean Pharmaceutical Industry Taeyoung Yoon (Donga ST)

August 11 Friday, 1:20-3:20PM, Room: Washington B
KHIDI Forum on Precision Medicine and Biomedical Device Development
Co-Chairs: Hanjoong Jo (Emory/Georgia Tech) and Kun Ho Yoon (Catholic University)

1:20 PM	Welcoming Remarks and Introduction to KHIDI Jeong Kee Hong (KHIDI, General Director)
1:45 PM	Animal model studies in KBIO for drug discovery Byung Hwa Hyun (Lab Animal Center, KBio Osong Medical Innovation Center)
2:10 PM	Precision Medicine Kun Ho Yoon (Catholic University)
2:35 PM	Robotic systems and technologies for Surgery and Intervention Jae Soon Choi (Ulsan University)
3:00 PM	Next Generation microFluidic cell Stretcher for cancer diagnosis and drug screening Aram Chung (RPI) - KSEA YIG winner

August 11 Friday, 3:30-5:30PM, Room: Independence A
BMP Poster Session
Judges: Changwon Park (Emory University), Sang-Ho Lee (Emory University), Ji Woong Han (Emory University)

ID	Title and Authors
BMP-P1	CpG island-mediated mammalian gene regulations Samuel Beck (The University of Texas at Austin)
BMP-P2	Influence of Prenatal Maternal Depression on Amygdala-Prefrontal Circuits in Infant Jiook Cha (Columbia University)
BMP-P3	Intellectual Property Rights in Global R&D Collaboration Yun Choe (Lucas & Mercanti, LLP)

BMP-P4	Leukotriene B4 receptor antagonists for the treatment of intractable respiratory diseases Yongseok Choi (Korea University)
BMP-P5	Literature Identification Strategy in Toxicology Risk Assessment for Pharmaceutical Drug and Food Product Development and Marketing Byoung-Joon Song (NIH)
BMP-P6	Discovery and mechanistic investigation of novel metabolic features of lung cancer and their potentials of clinical applications Mingzhu Fang (Rutgers University)
BMP-P7	A mathematical model predicts a delayed insulin peak during an oral glucose tolerance test as a high risk factor for diabetes Joon Ha (NIH)
BMP-P8	Improving Adoptive T Cell Therapy Using Cbl-b targeted CD4+ T Cells SeongJun Han (University of Toronto)
BMP-P9	Genome wide discovery of genetic variants affecting alternative splicing patterns in human using bioinformatics method Seonggyun Han (University of Utah)
BMP-P10	Neuromodulator induced bidirectional changes in ocular dominance in the mouse primary visual cortex Su Hong (Johns Hopkins University)
BMP-P11	The Impact of Iodinated X-Ray Contrast Agents on Formation and Toxicity of Disinfection By-Products in Drinking Water Clara Jeong (University of Wisconsin)
BMP-P12	The influence of natural killer T cells during the development of childhood acute leukemia Sumin Jo (UBC)
BMP-P13	The Construction of Regulatory Network for Insulin-Mediated Genes by Integrating Methods Based on Transcription Factor Binding Motifs and Gene Express Hyeim Jung (Purdue University)
BMP-P14	Preparation for the post-graduate Residency program as a Pharm.D candidate of 2020. Jungwook Kang (Rutgers Ernest Mario School of Pharmacy)
BMP-P15	Live cell imaging as a method of evaluating Radiation-induced DNA Double Stranded Breaks (DSBs) Jamie Kang (University of Oxford)
BMP-P16	Generation of Highly Pure and Faithful Spinal Motor Neurons from Human Pluripotent Stem Cells for Amyotrophic Lateral Sclerosis and Spinal Muscular A Byung Woo Kim (JHMI)
BMP-P17	Autocrine canonical WNT signaling is activated ectopically in skin disease to control KRT9 Dongwon Kim (JHMI)
BMP-P18	Racial dependent intron retention and DNA methylation in breast cancer Dongwook Kim (University of Utah)
BMP-P19	Loss of an androgen-inactivating and isoform-specific HSD17B4 splice form enables emergence of castration-resistant prostate cancer Hyun-Kyung Ko (Cleveland Clinic)
BMP-P20	Activity-induced synaptic structural modifications by an activator of integrin signaling at the Drosophila neuromuscular junction Joo Yeun Lee (USC)
BMP-P21	Stargazer: a program for calling star alleles with structural variation for pharmacogenes from next-generation sequencing data using CYP2D6 as a model Seung-been Lee (University of Washington)
BMP-P22	Coronary artery disease in lipodystrophy Ho Lim Lee (NIH)
BMP-P23	Therapeutic Approach using MRI-guided Focused Ultrasound for Biothreats Ji Hyun Lee (Uniformed Services University)

BMP-P24	Nanotoxicity of Titanium Dioxide Nanomaterials used in Personal Care Products and Role of Fatty Acid Composites in Oxidative Stress Heayeon Lee (Northeastern University)
BMP-P25	Development of nucleic acid scavengers for the removal of pro-inflammatory and thrombotic DAMPs Jaewoo Lee (Duke University)
BMP-P26	Robustness of Regulatory Gene Circuit Under Mutation Pressure Joo-Young Lee (University of Washington)
BMP-P27	Diversity of miRNA Binding Exons in 3'-UTRs and the Correlation of miRNA-Mediated mRNA Repression vis-À-vis Clinical Outcomes in Bladder Cancer Younghee Lee (University of Utah)
BMP-P28	Critical Role of Histone Deacetylase 3 for Acute Adaptive Thermogenesis in Brown Adipose Tissue Hee-Woong Lim (Univ. Penn)
BMP-P29	Development of a sensitive and specific assay for the detection of Group C rotavirus Sungsil Moon (CDC)
BMP-P30	Brown adipocyte lipid droplet lipolysis is not required for cold-induced thermogenesis Hyunsu Shin (GSU)
BMP-P31	Non-invasive Optical Imaging of Multiple Myeloma Bone Disease by Targeting Collagen Degradation Ikjae Shin (UAMS)
BMP-P32	C1q regulates macrophage polarization and inflammation resolution Myoungsun Son (Northwell)
BMP-P33	Regulation of Endogenous MAGP2 Extracellular Matrix Binding by Enzymatic Cleavage Ann Song (Fullerton)
BMP-P34	Mechanisms of Gut Leakiness, Leading to Advanced Liver Disease in Rodents Exposed to Alcohol and Nonalcoholic Substances Byoung-Joon Song (NIH)
BMP-P35	Axonal Transport Defects in Drosophila Model of C9-ALS Hyun Sung (JHMI)
BMP-P36	CYP2E1 regulation of alcohol-induced miRNAs Je-Hyun Yoon (Medical University of South Carolina)
BMP-P37	NF-κB regulates a metabolic dysfunction in rhabdomyosarcoma Peter Yu (OSUMC)

August 11 (Fri) 6:00 – 9:00 pm

BMP/BME Networking Dinner

Café Italia

<http://cafeitaliarestaurantva.com/>

Address: 519 S. 23rd street, Arlington, VA 22202

Tel: 703-521-2565

Direction: 0.5 miles, 10 min walking, will leave at 5:30 PM from Hyatt Hotel

Dinner is free

Saturday, August 12, 2017

August 12 Saturday, 8:00-9:40 AM, Room: Washington B

BMP-F Session: Immunology

Co-Chairs: Insoo Kang (Yale University), Eui-Cheol Shin (KAIST)

Time	Title and Authors
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8:00 AM	Controlling T cell immunity by common gamma-chain cytokine receptor expression Hyun Park (NIH/NCI)
8:20 AM	Pyrin Inflammasome Activation and RhoA Signaling in the Autoinflammatory Diseases Jae Jin Chae (NIH/NHGRI)
8:35 AM	Triggering of macrophage activation through TLR4-NOX2 axis in nonalcoholic fatty liver disease Won-Il Jeong (KAIST)
8:50 AM	Studying human immune cell traits using high dimensional analysis Insoo Kang (Yale University School of Medicine)
9:05 AM	Innate-like activity of memory CD8⁺ T cells in viral infection Eui-Cheol Shin (KAIST)
9:20 AM	IL-27-dependent regulation of regulatory T cell function in autoimmune inflammation Booki Min (Cleveland Clinic)

Saturday, August 12, 2017
August 12 Saturday, 8:00-9:40 AM, Room: Conference Theater
BMP-G Session: Vascular Biology
Co-Chairs: Changwon Park (Emory University), Young Kwon Hong (University of Southern California)

Time	Title and Authors
8:00 AM	Molecular Aspect of Vascular Anomalies Ho Yun Chung (Kyungpook National University)
8:20 AM	Role of myeloid cell in angiogenesis and response to anticancer therapies G-ONE AHN (POSTECH)
8:35 AM	Role of BMP signaling in cardiovascular development and remodeling S. Paul Oh (University of Florida)
8:50 AM	Molecular Basis of Flow-Induced Lymphatic Expansion Young-Kwon Hong (University of Southern California)
9:05 AM	Transcriptional regulation of cardiovascular development and angiogenesis Changwon Park (Emory University School of Medicine)
9:20 AM	Endothelial cell generation by direct reprogramming Sangho Lee (Emory University School of Medicine)

