

**2nd ANNUAL
INTERNATIONAL DRUG ABUSE RESEARCH
SOCIETY & INTERNATIONAL SOCIETY FOR
NEUROCHEMISTRY SATELLITE MEETING**

In Association with

KOREAN SOCIETY FOR DRUG ABUSE RESEARCH

**PROGRAM
&
ABSTRACTS**

Recent Frontiers and Advances in Drug Addiction

Organized by

***The Institute of Pharmaceutical Sciences,
Kangwon National University and IDARS***

August 17-21, 2009

Grand Hyatt Hotel, Seoul, Korea

Conference Organizers:

Syed F. Ali (USA), Hyoung-Chun Kim (S. Korea),
Michael Kuhar (USA), Eun-Joo Shin, Myung-Sang Kwon (S. Korea),
Kee Won Kim (S. Korea), Chae Ha Yang (S. Korea), Kiyofumi Yamada (Japan),
Toshitaka Nabeshima (Japan), James O'Callaghan (USA), and George Koob (USA)

REGISTRATION/WELCOME RECEPTION

Monday, August 17, 2009



ACKNOWLEDGEMENTS

Without the generous financial support from the following organizations this conference would not have been possible:

Korea Institute of Toxicology (KITOX)

International Society for Neurochemistry (ISN)

National Institute on Drug Abuse (NIDA)

Sigma-Tau Health Sciences (Rome, Italy)

**National Center for Toxicological Research/
US Food and Drug Administration (NCTR/FDA)**

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General Information about the Meeting Site

Seoul:

Seoul, S. Korea, a beautiful city as the venue for our meeting. For the last 600 years, the city has served as Korea's capital. Seoul is a city where the traditional and the cutting-edge exist side by side in perfect harmony. It's a dynamic city that never sleeps, and the list of things to do is endless. Seoul is a flourishing metropolis of over 11 million people. However, despite being one of the world's largest cities, it is remarkable safe, and visitors can enjoy the city's vibrant culture any time day or night without worry. August is the Holiday season in Korea, so you can also enjoy the festivities during a typical vacation time in Korea.

HISTORY: Center of Korean Culture:

Located to the west of the central region of the Korean Peninsula and Han river runs through it, Seoul, the capital city of the Republic of Korea, has been the center of the country in its long history from the prehistoric era to the present day.

It is believed that humans were living in the area that is now Seoul along the lower reaches of the Han River from the Paleolithic.

In 18 BC, the kingdom of Baekje founded its capital city, Wiryeseong in the place of Seoul nowadays. During the Three Kingdoms Era, the Seoul area was the strategic region all those three rival countries competed for, which illustrates the substantial significance of Seoul during that era. It was thought that the kingdom that controlled the Han River valley would also have strategic control of the whole peninsula, because it was a center of transportation.

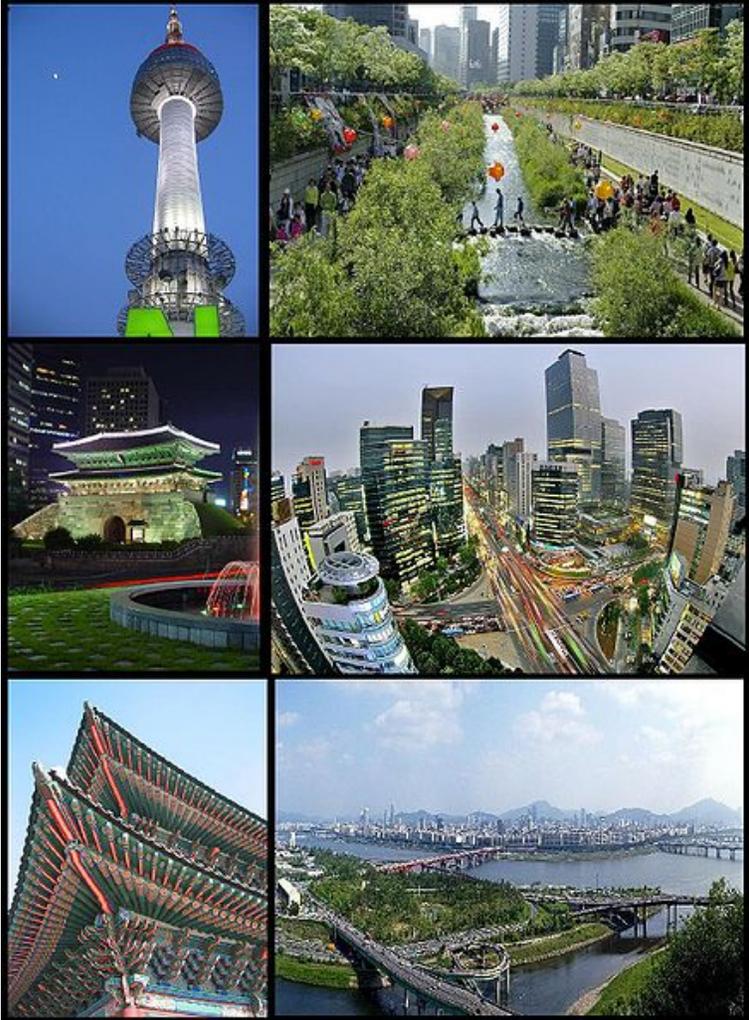
In 1104, Goryeo Dynasty built a palace in Seoul, which was then referred to as Namgyeong or "Southern Capital". Seoul grew into a full-scale city with political significance during this time

Seoul (then referred to as Hanseong or Hanyang) again became the capital of the Joseon Dynasty with its foundation in 1394. Since then, the city has been maintained as the historical center of the country.

In the Japanese colonization period in the early 20th century, many historical and traditional parts of Seoul were changed. The city was almost entirely destroyed in the Korean War, but an aggressive economic policy in the 1960s and 1970s helped to rebuild the city very rapidly. In the 1990s, some important historical buildings were restored, including Gyeongbokgung, one of the most royal palaces and the king's dwelling of the Joseon dynasty.

Now in its 600th year of official history, Seoul is a city where Korea's traditional

and modern cultures coexist. Seoul's influence in business, international trade, politics, technology, education and entertainment all contribute to its role as a leading global city. Seoul is the iconic city of the Miracle on the Han River and hosted landmark international events such as the 1988 Summer Olympics and the 2002 FIFA World Cup. In 2008, Seoul was named the world's sixth most economically powerful city by Forbes.com, ahead of Paris and Los Angeles.



1st row from left to right: N Seoul Tower • Cheonggyecheon
2nd row from left to right: Namdaemun • Gangnam
3rd row from left to right: Gyeongbokgung • Han River

Information on Scientific Sessions

Speaker Instructions

Please bring your presentation on a CD or USB port (memory stick/thumb drive) to the conference room 30 minutes prior to the beginning of the session on the day you present. Projector, PowerPoint software and a computer (Windows XP-based) will be provided for the presentations.

Poster Presenter Instructions

The poster session will be held adjacent to the meeting room from 4:00 – 6:00 PM on Tuesday, August 18 and on Wednesday, August 19 from 4:00 – 6:00 PM. Poster board will be made available beginning at 12:00 noon on Tuesday August 18, 2009.

PLEASE NOTE: The size of the poster boards are 150 cm (width) x 90 cm (height). Poster presenters are asked to prepare posters which will not only fit on the board, but also be easily viewed by the audience. Pushpins will be provided for your convenience to display your posters.

The poster numbers are listed on pages 22- 27.

Publication of Proceedings

The proceedings of this satellite meeting will be published in a special issue of the “Current Neuropharmacology.” All presenters are invited to submit manuscripts for publication in the proceedings. The deadline to submit manuscripts for the proceeding is October 1, 2009. Information for Authors will be available at the registration desk.

Monday, August 17, 2009

4:00 – 8:00 PM

REGISTRATION AND WELCOME

JJ Gazebo Area

Tuesday, August 18, 2009

7:00 - 8:30 AM Registration/Continental Breakfast on the First Floor Conference Area (Namsan III)

Conference Namsan III

8:30 – 9:00AM Opening of the Meeting
Welcome and General Information
Syed Ali/Michael Kuhar/Hyoung-Chun Kim

SESSION I: GENOMES/PROTEOMES AND DRUG ABUSE
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Moderators: Michael Kuhar (USA) and Jean Zwiller (FRANCE)

9:00 - 9:20 AM c-FOS REGULATES EXTINCTION OF CUE-ELICITED COCAINE SEEKING.
Ming Xu, Department of Anesthesia and Critical Care, University of Chicago, Chicago, Illinois, USA

9:20 - 9:40 AM GENE EXPRESSION IN DOPAMINERGIC BRAIN STRUCTURES OF RATS SELF-ADMINISTERING COCAINE. EFFECT OF HISTONE DEACETYLASE INHIBITION.
Jean Zwiller, Centre de Neurochimie, Strasbourg, FRANCE

9:40 -10:00 AM IDENTIFYING CHANGES IN THE SYNAPTIC PROTEOME OF CIRRHOTIC ALCOHOLIC SUPERIOR FRONTAL GYRUS
Peter Dodd, University of Queensland, SMMS, Brisbane, AUSTRALIA

10:00-10:20 AM ALCOHOL METABOLIZING PATHWAY GENES IN ALCOHOL DEPENDENCE & ALCOHOLIC PANCREATITIS: FIRST INDIAN DATA
Meera Vaswani, All India Institute of Medical Sciences, New Delhi, INDIA

10:20 - 10:40 AM Coffee/Tea Break

SESSION II: COCAINE

Moderators: Glen Hanson (USA) and Kee Won Kim (KOREA)

10:40-11:00AM CREB OVER EXPRESSION IN THE RAT NUCLEUS ACCUMBENS INCREASES CART mRNA AND PEPTIDE LEVELS *IN VIVO*.

Michael J. Kuhar, Yerkes National Primate Center of Emory, Atlanta, Georgia, USA

11:00 -11:20AM COCAINE REGULATES ERM PROTEINS AND RHOA SIGNALING IN THE NUCLEUS ACCUMBENS.

Jeong-Hoon Kim, Department of Physiology, Brain Korea 21 Project for the Medical Sciences, Yonsei University College of Medicine, Seoul, Korea

11:20 -11:40AM COCAINE ABUSE AND HIV-1 INFECTION: ROLE OF RDGF/PDGF RECEPTOR AXIS IN DISRUPTION OF BLOOD BRAIN BARRIER.

Shilpa Bush, Department of Molecular & Integrative Physiology and Microbiology, University of Kansas Medical Center, Kansas City, Kansas, USA

11:40 -12:00PM SEX DIFFERENCES IN THE PSYCHOSTIMULANT EFFECTS OF COCAINE: ROLE OF EXTRADIOL.

Annabell Segarra, Physiology Department, University of Puerto Rico, Medical Sciences Campus, San Juan, PR

12:00 -12:20PM CHRONIC COCAINE AND/OR STRESS DIFFERENTIALLY ALTERS COCAINE-INDUCED REWARD IN ADOLESCENT AND ADULT RATS.

Sonya Sobrian, Department of Pharmacology, Howard University College of Medicine, Washington, DC, USA

12:20 - 12:40PM ADDICTION: CAN WE FORGET IT?

Carlos Jimenez-Rivera, Physiology Department, University of Puerto Rico, Medical Sciences Campus, San Juan, PR

12:40- 2:00PM LUNCH

SESSION III: NICOTINE/ MARIJUANA/OPIATE

Moderators: Mohan Sopori (USA) and Emmanuel Onaivi (USA)

2:00 -2:20PM NEUROIMMUNE RESPONSE TO CHOLINERGIC AGENTS.

Mohan Sopori, Lovelace Respiratory Research Institute, Albuquerque,

- 2:20 -2:40PM *New Mexico, USA*
NICOTINE AND NEONATAL SYMPATHETIC NEURONS: CHANGES IN CALCIUM DYNAMICS.
Malathi Srivatsan, Department of Biological Sciences, Arkansas State University, Jonesboro, Arkansas, USA
- 2:40 -3:00PM GENETIC BASIS OF MARIJUANA USE.
Emmanuel Onaivi, Biology Department, William Paterson University, Wayne, New Jersey, USA
- 3:00 -3:20PM EFFECTS OF NITRIC OXIDE SYNTHASE INHIBITOR TO THE OPERANTS DECREMENT PRODUCES BY NALOXANE IN MORPHINE TREATED RATS.
Raka Jain, National Drug Dependence Treatment Centre , All India Institute of Medical Sciences, New Delhi 110029, INDIA
- 3:20 -4:00PM Coffee/Tea Break

SESSION IV: POSTER SESSION : 4:00 – 6:00 PM

Moderators: Chae Ha Yang (KOREA) and Ki-Wan Oh (KOREA)

- 4:00 - 5:00 PM Odd-numbered posters: Authors should be at their posters for questions.
- 5:00 - 6:00 PM Even-numbered posters: Authors should be at their posters for questions.

7:00 – 9:00 PM
RECEPTION DINNER
Namsan III

Wednesday, August 19, 2009

7:00 - 8:30 AM Registration/Continental Breakfast in the First Floor Conference Area
(Namsan III)

SESSION V: METHAMPHETAMINE
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Moderators: Jean Cadet (USA) and Hyoung-Chun Kim (KOREA)

8:30 -8:50AM THE ROLE OF NEUROTENSIN IN EXTINCTION OF METHAMPHETAMINE
SELF ADMINISTRATION.

Glen Hanson, Department of Pharmacology and Toxicology,
University of Utah, Salt Lake City, Utah, USA

8:50 -9:10AM METHAMPHETAMINE PRECONDITIONING: DIFFERENTIAL
TRANSCRIPTIONAL RESPONSES IN THE RAT BRAIN.

Jean Lud Cadet, Molecular Neuropsychiatry Research Branch,
DHHS/NIH/NIDA Intramural Research Program, Baltimore,
Maryland, USA

9:10 -9:30AM A NEUROTOXIC DOSE OF METHAMPHETAMINE INDUCES RAPID
CELL DEATH, FOLLOWED BY CELL GENESIS, AND PROTRACTED
CELL DEATH IN THE STRIATUM OF MICE.

Jesus Angulo, Department of Biological Sciences, Hunter
College/CUNY, New York, New York, USA

9:30 -9:50AM SIGNALING MARKERS ASSOCIATED WITH SEX DIFFERENCES IN
METHAMPHETAMINE-INDUCED STRIATAL DOPAMINE
NEUROTOXICITY.

Dean Dluzen, Department of Anatomy and neurobiology, NEOUCOM,
Rootstown, Ohio, USA

9:50-10:10AM BONE MORPHOGENETIC PROTEIN-7 REDUCES METHAMPHETAMINE-
MEDIATED NEUROTOXICITY.

Yun Wang, NIDA Intramural Research Program, Baltimore, Maryland,
USA

10:10-10:30AM Coffee/Tea Break

SESSION VI: MDMA-ECSTASY

Moderators: Susan Schenk (New Zealand) and Jerry Meyer (USA)

- 10:30-10:50AM** EFFECTS OF MDMA ON SERT AND VMAT-2 PROTEIN AND GENE EXPRESSION IN RATS: IMPLICATIONS FOR MDMA NEUROTOXICITY.
Jerrold Meyer, *Neuroscience and Behavior Program, University of Massachusetts, Amherst, Massachusetts, USA*
- 10:50-11:10AM** DRUG-SEEKING IN RESPONSE TO A PRIMING INJECTION OF MDMA IN RATS: RELATIONSHIP TO INITIAL SENSITIVITY TO SELF-ADMINISTERED MDMA AND DORSAL STRIATAL DOPAMINE
Susan Schenk, *Victoria University of Wellington, School of Psychology, Wellington, New Zealand*

SESSION VII: CELLULAR AND MOLECULAR MECHANISM OF METHAMPHETAMINE-INDUCED NEUROTOXICITY

Moderators: Kiyofumi Yamada (JAPAN) and Ing-Kang Ho (Taiwan, R.O.C.)

- 11:10-11:30AM** Mu-OPIOID RECEPTOR IN METHAMPHETAMINE-INDUCED SENSITIZATION.
Ing Kang Ho, *National Health Research Institute, Zhunan Town, TAIWAN, R.O.C.*
- 11:30 -11:50AM** PHARMACOLOGIC TREATMENT WITH GABAB RECEPTOR AGONIST ON METHAMPHETAMINE-INDUCED COGNITIVE IMPAIRMENT IN MICE
Kiyofumi Yamada, *Department of Neuropsychopharmacology and Hospital Pharmacy, Nagoya University Graduate School of Medicine, JAPAN*
- 11:50 -12:10PM** METHAMPHETAMINE-INDUCED NEUROTOXICITY LINKED TO INCREASES IN AUTOPHAGY AND IS INFLUENCED BY PKC Δ IN DOPAMINERGIC NEURONAL CELLS.
Arthi Kanthasamy, *Department of Biomedical Sciences, Iowa Center for Advanced Neurotoxicology, Iowa State University, Ames, Iowa, USA*
- 12:10-12:20AM** METHAMPHETAMINE LIKE MPTP INDUCES NEURODEGENERATION IN THE CNS NUCLEI - SPINAL CORD.
Naren Banik, *Department of Neurosciences, Medical University of South Carolina, Charleston, South Carolina, USA*
- 12:20 -2:00PM** Lunch

**SESSION VIII: METHAMPHETAMINE:
NEUROTOXICITY and NEUROPROTECTION**

Moderators: Toshitaka Nabeshima (JAPAN) and Eun-Joo Shin (KOREA)

2:00 - 2:20PM A NOVEL SIGMA (σ) RECEPTOR ANTAGONIST, CM156, ATTENUATES METHAMPHETAMINE-INDUCED LOCOMOTOR STIMULATION AND NEUROTOXICITY IN MICE

Nidhi Kaushal, *Basic Pharmaceutical Sciences, West Virginia University, Morgantown, West Virginia, USA*

2:20 - 2:40PM GLUTATHIONE PEROXIDASE MIMICS ATTENUATE METHAMPHETAMINE-INDUCED DOPAMINERGIC TOXICITY

Eun-Joo Shin, *Neuropsychopharmacology and Toxicology Program, College of Pharmacy, Kangwon National University, Chunchon, South Korea*

2:40 -3:00PM ROLES OF A NOVEL MOLECULE "SHATI" IN THE DEVELOPMENT OF METHAMPHETAMINE-INDUCED DEPENDENCE.

Toshitaka Nabeshima, *Meijo University Graduate School of Pharmaceutical Science, Nagoya, JAPAN*

SESSION IX: GHB/GBL/1,4-BD

Moderators: Ratna Sircar (USA) and Tucker Patterson (USA)

3:00 -3:20PM LOCOMOTOR AND CATALEPTIC EFFECTS OF GHB AND ITS PRECURSORS GBL AND 1,4-BD IN MICE: ACUTE AND CHRONIC EFFECTS.

Timothy Maher, *Department of Pharmaceutical Sciences, Massachusetts College of Pharmacy and Health Sciences, Boston, Massachusetts, USA*

3:20 -3:40PM GAMMA-HYDROXYBUTYRIC ACID (GHB) ALTERS GENE EXPRESSION IN MOUSE BRAIN.

Tucker Patterson, *Division of Neurotoxicology, National Center for Toxicological Research/FDA, Jefferson, Arkansas, USA*

3:40 -4:00PM GHB-INDUCED COGNITIVE DEFICITS DURING ADOLESCENCE: ROLE OF NMDA RECEPTOR.

Ratna Sircar, *Department of Psychiatry & Behavioral Sciences, Albert Einstein College of Medicine, Bronx, New York, USA*

4:00 -4:30PM Coffee/Tea Break

4:00 -5:00PM IDARS Business Meeting

SESSION X: POSTER SESSION: 4:00 – 6:00 PM

**Moderators: Arthi Kanthasamy (USA) and
Hong-Won Suh (KOREA)**

4:30 -5:20PM Odd-numbered posters: Authors should be at their posters for questions.

5:20 -6:00PM Even-numbered posters: Authors should be at their posters for questions.

Thursday , August 20, 2009

**Conference Organizers plan a tour of
Seoul and surrounding Area
No Scheduled Conference activities**

Friday, August 21, 2009

7: 00 -9:00AM Registration/Continental Breakfast in the First Floor Conference Area (Namsan III)

SESSION XI: NOVEL NEUROBIOLOGICAL TARGETS FOR THE TREATMENT OF ALCOHOLISM

Moderators: George Koob (USA) and Antonio Noronha (USA)

9:00 -9:20AM ALCOHOL DEPENDENCE: A CHRONIC RELAPSING BEHAVIORAL DISORDER –AN OVERVIEW.
Antonio Noronha, NIAAA, Bethesda, MD, USA

9:20 -9:40AM HUMAN LABORATORY AND CLINICAL TRIAL EVIDENCE FOR A NEUROMODULATORY APPROACHES TO TREATMENT OF ALCOHOL DEPENDENCE.
Barbara Mason, The Scripps Research Institute, La Jolla, California, USA

9:40 -10:00AM A CONVERGENT PATHWAY IN THE AMYGDALA FOR BRAIN STRESS PEPTIDES IN ALCOHOL DEPENDENCE.
Nick Gilpin, The Scripps Research Institute, La Jolla, California, USA

10:00 -10:20AM NOVEL TARGETS FROM THE DARK SIDE OF DEPENDENCE ON ALCOHOL: FOCUS ON CRF AND BRAIN STRESS SYSTEM.
George Koob, The Scripps Research Institute, La Jolla, California, USA

10:20 -10: 40AM Coffee/Tea Break

SESSION XII: TREATMENT OF DRUG ADDICTION: METHAMPHETAMINE, CANNABIS AND OPIATES

Moderators: John Mendelson (USA) and Marco Diana (ITALY)

10:40 -11:00AM DEVELOPING PHARMACOTHERAPIES FOR METHAMPHETAMINE ADDICTION.
John Mendelson, Addiction and Pharmacology Research Laboratory, St Luke's Hospital, California Pacific Medical Center Research Institute, San Francisco, California USA

11:00 -11:20AM NOVEL MEDICATION DEVELOPMENT TARGETS FOR

PSYCHOSTIMULANT ABUSE TREATMENT.

Tong H. Lee, Department of Psychiatry and Behavioral Sciences, Duke University Medical Center, Durham, North Carolina, USA

11:20 -11:40AM POSSIBLE INVOLVEMENT OF THE HYPOTHALAMUS PRO-OPIOMELANOCORTIN GENE AND BETA-ENDORPHIN EXPRESSION ON THE MORPHINE DEPENDENCY AND WITHDRAWAL SYMPTOM DEVELOPMENT.

Hong-Won Suh, Department of Pharmacology and Institute of Natural Medicine, College of Medicine, Hallym University, Chuncheon, Korea

11:40 -12:00PM ALTERED ARCHITECTURE OF THE MESOLIMBIC DOPAMINE SYSTEM AND ITS FUNCTIONAL CONSEQUENCES IN CANNABIS DEPENDENCE.

Marco Diana, Department of Drug Sciences, University of Sassari, Sassari, ITALY

12:00-12:20PM LONG TERM OUTCOME OF BUPRENORPHINE TREATMENT OF OPIATE-DEPENDENT SUBJECTS.

Marco Diana, Department of Drug Sciences, University of Sassari, Sassari, ITALY

12:20 -2:00PM LUNCH

SESSION XIII: INHALANT/ANESTHETICS

Moderators: Merle Paule (USA) Jeong-Hoon Kim (KOREA)

2:00 - 2:20PM EXPRESSION PROFILING IN THE DEVELOPING RAT BRAIN EXPOSED TO KETAMINE.

Cheng Wang, Division of Neurotoxicology, National Center for Toxicological Research/FDA, Jefferson, Arkansas, USA

2:20 -2:40PM GENE DEVELOPMENTAL KETAMINE EXOPOSURE CAUSES PERSISTENT COGNITIVE DEFICITS IN RHESUS MONKEYS.

Merle Paule, Division of Neurotoxicology, National Center for Toxicological Research/FDA, Jefferson, Arkansas, USA

2:40 -3:00PM AN ANIMAL MODEL OF TOLUENE-INDUCED PSYCHOTIC DISORDER.

Hwei-Hsien Chen, Institute of Pharmacology and Toxicology, Tzu Chi University, Hualien, Taiwan

3:00 - 3:30 PM Coffee/Tea Break

3:00 – 4:00PM KSDAR Business meeting

SESSION XIV: PANEL DISCUSSION AND OPEN FORUM

4:00-5:30PM SUMMARY AND RECOMMENDATIONS

Panelists:

**Michael Kuhar
Peter Dodd
Kee Won Kim
Hyoung-Chun Kim
Susan Schenk
John Mendelson**

**George Koob
Toshitaka Nabeshima
Jean Cadet
Myung-Sang Kwon
Jean Zwiller
Marco Diana**

5:30 PM

**CONCLUDING REMARKS/MEETING ADJOURNED
George Koob/Michael Kuhar/Syed Ali/Hyoung-Chun Kim**

**7:00 - 10:00 PM
POOLSIDE FAREWELL DINNER**