



4th



***INTERNATIONAL DRUG ABUSE RESEARCH
SOCIETY***

PROGRAM & ABSTRACTS

Recent Advances in Drug Addiction

***April 15-19, 2013
Hyatt Regency Hotel,
Mexico City, Mexico***

Conference Organizers:

**Syed Ali (USA), George Koob (USA), Oscar Prospéro (Mexico),
Silvia Cruz (Mexico), Abel Santamaria (Mexico), Alicia Brusco (Argentina),
Barbara Mason (USA), Jesus Angulo (USA), James O'Callaghan(USA),
Emmanuel Onaivi (USA), and Michael Kuhar (USA)**

The International Drug Abuse Research Society (IDARS) would like to thank the following organizations for their generous financial support of the meeting:



Research Foundation of
The City University of New York



National Institute of
Neurology & Neurosurgery
Mexico City, Mexico

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**National Center for Toxicological Research/
US Food and Drug Administration (NCTR/FDA)
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General Information about the Meeting Site

LANGUAGE

The official language of the IDARS meeting is English. In Mexico people speak Spanish. Mexican Spanish is polite, clear and easy to understand by Latin American standards. The speed at which the language is spoken is not as accelerated as it is Spain and some South American countries and pronunciation is softer, making the language easier to 'pick-up' and easier to learn.

SAFETY AND SECURITY TIPS

As in any other big city, it is important to take responsibility for your personal safety and exercise precaution.

BEFORE YOU GO

Think preventively when packing for your trip; consider leaving behind expensive jewelry, watches, and items of sentimental value. A smaller, inexpensive camera may be a better choice than larger, expensive models. You may not need to take an ATM card if your credit card and a limited amount of cash will suffice.

Make a Xerox copy of your passport to carry in your luggage separately from your actual passport. Consider storing a digital scan of your passport (and/or other critical documents) with family, friends, or your employer so that it could be emailed to you in an emergency.

Avoiding crime is often a matter of keeping a low profile. **Consider exchanging some currency to Pesos before you begin travel and avoid displaying large amounts of cash if you use the exchanges at the Mexico City airport.**

DURING YOUR STAY

When leaving your hotel room to go out at night, take only the cash you need for each excursion and consider leaving your credit cards, watch, and jewelry behind in the hotel room safe.

Keep your hotel information with you for quick reference to the venue address and emergency telephone numbers, but avoid wearing your badge on the street. Be aware that laptop bags and exposed mobile phones are tempting items for thieves.

Request a taxi from the hotel and ask the concierge for a street map. Keep low profile. Avoid taking the Metro and hailing taxis or asking strangers for directions on the street.

Use Common Sense. If you must walk at night, walk with companions, avoid the empty streets and keep to the major thoroughfares, even if that means walking a few extra blocks. What may look like a safe side street in the daytime, may pose greater risks after dark.

Many pickpockets and street criminals employ distractions by accomplices. Avoid stopping to help someone in a busy place, even if it's a child or elderly person.

If you are accosted on the street, keep your cool, hand over your valuables, and don't try to fight back. The person confronting you may not be alone.

Be careful near traffic. Automobile accidents are not uncommon and vehicles do not defer to pedestrians. Some sidewalks in older areas may be in need of repair - so watch you step and avoid distractions such as talking or texting on your phone while walking.

Avoid crowds of demonstrators. Demonstrations are common, and usually peaceful. However, even demonstrations intended to be peaceful can turn confrontational and escalate to violence and police arrest unexpectedly.

If you need to use a cash machine, use those located in hotels or banks. Avoid cash machines on streets or less busy areas. If you need help, ask an employee at the bank or hotel.

Keep your belongings in sight particularly in open areas like restaurants, bars, parks, and even in the rooms at the Meeting venue. Don't leave purses, laptop bags, or cameras hanging on chairs or on the floor.

MEXICO CITY INTERNATIONAL AIRPORT

Mexico City International Airport is located 8 miles (13 km) east of the historical city center. Considered one of the busiest airports in Latin America, it is the nation's commercial flight gateway

GETTING FROM THE AIRPORT TO YOUR HOTEL:

Taxis are regulated and passengers should pay in advance at the taxi counter in Arrivals. Use only the clearly marked "TAXI" service. These cars are white and yellow with black airplane stickers on the doors. A drawing of a car on the ticket will tell you what type of car the ticket is valid for. It is not recommended to walk outside the airport terminal in search of cheaper taxi service unless you have pre-arranged your service. Do not use the Green and White taxis. **It should cost about 200 - 250 peso from Airport to Hyatt Regency Hotel (1US\$ = 12.50 peso).**

TIPPING

In Mexico, not only is it customary, it is expected and appreciated in return for good service.

Most people working in Mexico's tourism and service sectors rely on your tips to supplement their basic pay and they give good service to prove that it makes a significant difference to them.

When you are traveling in Mexico, always keep some loose change in your pocket because you never know when you're going to need some of it for a tip.

Even fringe services like someone at a taxi rank opening the door for you (and perhaps putting your cases in the car's trunk) should receive a small tip (just 1 or 2 pesos will suffice in these cases).

Some hotels and tours indicate that "all tips are included in the price"; if this is the case, fair enough, and there is no need to tip further. You may still wish to leave a small tip for the maids at the rooms you stay in, or offer the tour guide a small tip at the end of the program.

Although tips are frequent in Mexico, the amounts are relatively small, and they really can make a difference to the person whom you are rewarding.

CULTURE AND TOURISM

ARCHAEOLOGY - In Mexico City you can find archaeological ruins of the Mexican culture (more commonly known as the Aztec culture). At these places, and in their museums, you can learn more about the mysteries of the Aztecs' cosmo-vision and their customs, some of which persist in the

capital today: Templo mayor, Tlatelolco, Cuicuilco.

CONTEMPORARY ARCHITECTURE - Mexico City is full of history and it has been the center point of a nation in constant growth, as evidenced in the modern architecture seen in the present-day capital. To fully appreciate this, you can visit the areas that are considered the most representative in contemporary architecture.

HISTORICAL ARCHITECTURE - Mexico City's Historic Center is the oldest part of the capital and it has many architectural treasures that are appreciated in Mexico and throughout the world. As you walk around the downtown area, you'll find excellent examples of classical and colonial architecture. Many of the buildings are shrouded in magic and legend and the area has such an impressive architectural offering that the UNESCO declared it a World Heritage Site.

ARTS AND CRAFTS - In Mexico City you'll find crafts from any state in the nation: gold and silver jewelry, textiles, leather products, such as belts and purses, and wooden toys (spin tops, yo-yos and Mexican baleros). You'll also see a wide selection of furniture made from various materials that require different techniques. These are just some of the arts and crafts that you can buy in markets such as the Ciudadela and the Centro Artesenal Buenavista.

MUSEUMS - Mexico City has more museums than just about any other tourist destination in the world. Many are worth visiting for their architecture as well as their cultural offerings, which include art exhibits and history displays.

RELIGION AND MYSTICISM - Mexico City is one of the world's capitals with the highest number of Catholic adherents, which comes as a result of colonial influences in religion, which are very much embedded in present-day religious practices. Among the most important religious celebrations are: the pilgrimage to the Basilica of Guadalupe.

CURRENCY

The Mexican Peso

Mexico's currency is the Mexican Peso. There are one hundred Mexican cents to every Peso.

The symbol for the the Mexican Peso is \$. To distinguish this from the Dollar, you sometimes see it presented as MX\$ or e.g. \$100 MN. The MN stands for Moneda Nacional, or National Currency.

Mexican Bank notes are printed in denominations of 20, 50, 100, 200, 500 and 1000 Pesos. The most commonly used are the 50, 100 and 200 Peso notes.

1 US dollar = 12.50 MX\$ (Mexican Peso) and it may vary from place to place.

ELECTRICAL POWER

The electricity standard is 110 volts, the same as in USA and Canada

Emergency Contact Information

 Ambulance 065  Fire 068  Police 060

Information on Scientific Sessions

Speaker Instructions

Please bring your presentation on a 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 based) will be provided for the presentations.

Poster Presenter Instructions

The poster session will be held adjacent to the meeting room from 4:00 - 7:00 PM on Tuesday, April 16, 2013 and Wednesday, April 17, 2013. Poster board will be made available beginning at 12:00 noon on Tuesday April 16, 2013.

PLEASE NOTE: The suggested poster size will be 5 ft wide and 3 ft tall. Poster presenters are asked to prepare posters which will fit on the board, and should be easily viewed by the audience. Pushpins will be provided for your convenience to display your posters.

The poster numbers are listed on pages 21- 24.

Publication of Proceedings

The proceedings of this satellite meeting will be published in a newly launched online IDARS Journal. All presenters are invited to submit manuscripts for publication in the proceedings. The deadline to submit manuscripts for publication is July 31, 2013. Information for Authors will be available at the registration desk and on the IDARS website: www.IDARS.org as well as on www.ashdin.com.

Monday, April 15, 2013

REGISTRATION AND WELCOME

1st Floor

4:00 – 8:00 PM

Tuesday, April 16, 2013

7:00 - 9:00AM Registration/Continental Breakfast (located on the First Floor)

Conference: Capulin Room – 1st Floor

8:30 - 9:00AM Opening of the Meeting
Welcome and General Information

Syed Ali/George Koob

Teresa Corona Vazquez

Director General, National Institute of Neurology and Neurosurgery, Mexico City, Mexico

Rafael Camacho-Solis

Director, IAPA, Institute of Attention and Prevention of Addictions, Mexico City, Mexico

SESSION I: ALCOHOL I: Stress Connection
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Moderators: George Koob (USA) and Michael Kuhar (USA)

9:00 -9:20AM High traumatic stress reactivity promotes alcohol drinking and recruits cortico-amygdalar circuitry.

Nicholas Gilpin*, Louisiana State University Health Sciences Center
New Orleans, Louisiana, USA

*Kuhar Travel Awardee

9:20 -9:40AM Alcohol self-administration is elevated by stress history and regulated by PDE10A,

Marian Logrip, The Scripps Research Institute, La Jolla, California, USA

9:40 -10:00AM Endocannabinoid system dysregulation may facilitate alcohol intake in rats.

Oscar Prospéro-Garcia, Universidad Nacional Autónoma de México, México, D.F., MEXICO

10:00 -10:20AM Alcohol Addiction and depression: Which comes first?

Yousef Tizabi, Howard University College of Medicine, Washington, DC, USA

10:20 -10:40AM Alcoholism as a Stress Surfeit Disorder.

George Koob, The Scripps Research Institute, La Jolla, California, USA

10:40 -11:00AM Coffee/Tea Break

SESSION II: ALCOHOL II: Potential Treatments

Moderators: Antonio Noronha (USA) and Barbara Mason (USA)

11:00 -11:20AM Profiles of GABA_a receptor subtypes in human brain relevant to brain imaging.

Peter Dodd, *The University of Queensland, Brisbane, AUSTRALIA*

11:20 -11:40AM Bringing clinical trials into the 21st century - Developing the tools to discover new treatments.

John Mendelson, *California Pacific Medical Center Research Institute, San Francisco, California, USA*

11:40 -12:00PM A human laboratory study of Mifepristone treatment for alcohol dependence.

Barbara Mason, *The Scripps Research Institute, La Jolla, California, USA*

12:00 -12:20PM Lorcaserin, a 5-HT_{2c} agonist, reduces alcohol intake and nicotine self-administration in female rats.

Amir Rezvani, *Duke University Medical Center, Durham, North Carolina, USA*

12:30 - 2:00PM LUNCH – Tejocote Room – First Floor

SESSION III: RESEARCH ON INHALANT MISUSE: From Epidemiology to Epigenetics

Moderators: Silvia Cruz (MEXICO) and John Woodward (USA)

2:00 -2:20PM Epidemiology of inhalant misuse: new challenges to neuroscience and public policy.

María Elena Medina-Mora, *Instituto Nacional de Psiquiatria Ramón de la Fuente, México, D.F., MEXICO*

2:20 -2:50PM Medial prefrontal cortex regulation of toluene-induced alterations in excitatory synaptic transmission onto mesolimbic dopamine neurons.

John Woodward/Jacob Beckley, *Medical University of South Carolina, Charleston, South Carolina, USA*

2:50- 3:10PM Toluene: From molecular targets to behavior.

Silvia Cruz, *CINVESTAV, México, D.F., MEXICO*

3:10- 3:30PM A case of the vapors: Elucidating the behavioral pharmacology and abuse liability of inhalants.

Keith Shelton, *Virginia Commonwealth University School of Medicine, Richmond, Virginia, USA*

3:30 -3:50PM **Toluene, epigenetics and aging.**
Mónica Lamas, CINVESTAV, México, D.F., MEXICO

3:50- 5:00PM **COFFEE/TEA BREAK**

SESSION IV:	POSTER SESSION: 4:00 – 7:00PM
Moderators:	<u>Abel Santamaria (MEXICO) and Ashraf Virmani (ITALY)</u>

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

5:30 -6:30 PM **Even-numbered posters: Authors should be at their posters for questions.**

Wednesday, April 17, 2013

7:00 - 8:30 AM Registration/Continental Breakfast (located on the First Floor)

SESSION V: COCAINE

Moderators: Emilio Ambrosio (SPAIN) and Jean Zwiller (FRANCE)

8:00 - 8:20AM Dopamine D3 receptors regulate reconsolidation of cocaine memory.

Ming Xu, *The University of Chicago, Chicago, Illinois, USA*

8:20 - 8:40AM Cocaine self-administration by rats is inhibited by Cyclic GMP-elevating agents. Involvement of the epigenetic markers MeCP2 and HDAC2.

Jean Zwiller, *Université de Strasbourg, Strasbourg, FRANCE*

8:40 - 9:00AM Proenkephalin gene expression changes in immune cells after cocaine self-administration, extinction and reinstatement.

Emilio Ambrosio, *Universidad Nacional de Educacion A Distancia, Madrid, SPAIN*

9:00 - 9:20AM CART peptide: depletion enhances cocaine's effects, and chronic cocaine changes CARTp's effects.

Michael Kuhar, *Yerkes National Primate Research Center of Emory University, Atlanta, Georgia, USA*

SESSION VI: CANNABINOIDS

Moderators: Emmanuel Onaivi (USA) and Oscar Prospéro (MEXICO)

9:30 - 9:50AM Behavioral effects of CB2 cannabinoid receptor modulation.

Emmanuel Onaivi, *William Paterson University, Wayne, New Jersey, USA*

9:50 - 10:10AM Selective cannabinoid CB2 receptor antagonism inhibits neuronal firing of ventral tegmental area dopamine neurons.

Eliot Gardner, *National Institutes of Health/National Institute on Alcoholism, Rockville, Maryland, USA*

10:10 -10:30AM Are endocannabinoids involved in food addiction?

Oscar Prospéro-García, *Universidad Nacional Autónoma de México, México, D.F., MEXICO*

10:30 - 10:50AM Cannabinoids: neurotoxic and/or neuroprotector.

Alicia Brusco, *Instituto de Biología Celular y Neurociencia; IBCN (UBA-CONICET), Buenos Aires, ARGENTINA*

- 10:50 -11:10AM **Psychological dependence of Δ 9-Tetrahydrocannabinol (Δ 9-THC) and synthetic cannabinoids JWH-073, JWH-081 and JWH-210.**
Hoil Kang, Korea Food and Drug Administration, Chungcheongbuk-do, KOREA
- 11:10 - 11:30AM **Coffee/Tea Break**

SESSION VII: SUBSTITUTED AMPHETAMINES AND EPIGENETICS

Moderators: Glen Hanson(USA) and James O'Callaghan (USA)

- 11:30 -11:50AM **Role of endogenous neurotensin (NT) systems in extinction of operant behavior associated with methamphetamine (METH) or food self-administration.**
Glen Hanson, University of Utah, Salt Lake City, Utah, USA
- 11:50 -12:10PM **Gene expression profiling and pathway analyses reveal molecular signatures and relationships underlying enhanced methamphetamine neurotoxicity caused by protracted corticosterone exposure.**
James O'Callaghan, Center For Disease Control/NIOSH, Morgantown, West Virginia, USA
- 12:10 -12:30PM **Identification of potential biomarkers of amphetamine damage to the cerebral vasculature, meninges and choroid plexus through gene expression analysis and fluoro-gold histology.**
John Bowyer, National Center for Toxicological Research/FDA, Jefferson, Arkansas, USA
- 12:30 -12:50PM **Genome-wide analysis of histone H4K5 acetylation reveals a role for H4K5Ac binding as a regulator of a subset of methamphetamine-regulated genes in the rat striatum.**
Jean Lud Cadet, DHHS/NIH/NIDA Intramural Research Program, Baltimore, Maryland, USA
- 12:50 -2:00PM **Lunch - Tejocote Room – First Floor**

SESSION VIII: HIV-INFECTIONS AND DRUG ABUSE

Moderators: Mohan Sopori (USA) and Shilpa Buch (USA)

- 2:00 -2:20PM **Cocaine-mediated induction of platelet-derived growth factor: Implication for increased vascular permeability.**
Shilpa Buch, University of Nebraska Medical Center, Omaha, Nebraska, USA

- 2:20 -2:40PM** **Morphine in the context of HIV infection increases host susceptibility to sepsis by compromising intestinal barrier function in a TLR-dependent.**
Sabita Roy, University of Minnesota, Minneapolis, Minnesota, USA
- 2:40 -3:00PM** **Role of nicotinic receptors in the regulation of airway mucus in health and disease.**
Mohan Sopori, Lovelace Respiratory Research institute, Albuquerque, New Mexico, USA
- 3:10-3:30PM** **Evidence for direct, indirect and epistatic associations of candidate genes of the reward system with heroin dependence.**
Alfreda Stadlin, Chungbuk National University School of Medicine, Cheongju, SOUTH KOREA
- 3:30 -4:00PM** **Coffee/Tea Break**
- 4:00-4:30PM** **IDARS Business Meeting**

SESSION IX:	POSTER SESSION: 4:00 – 6:00 PM
Moderators:	Zbigniew Binienda (USA) and Alicia Brusco (ARGENTINA)

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

Thursday, April 18, 2013

Conference Organizers plan a tour of Mexico City

No Scheduled Conference activities

Friday, April 19, 2013

7: 30 - 9:00AM Registration/Continental Breakfast (located on the First Floor)

SESSION X: SUBSTITUTED AMPHETAMINES: MDMA/MPA/GHB

Moderators: Susan Schenk (NEW ZEALAND) and Jerry Meyer (USA)

- 9:00 - 9:20AM** Role of the serotonin_{1b} receptor in MDMA self-administration.
Susan Schenk, Victoria University of Wellington, Wellington, NEW ZEALAND
- 9:20 -9:40AM** Chronic adolescent MDMA and THC co-administration leads to reduced serotonin transporter binding, spatial memory deficits, increased impulsivity, and anhedonia during drug withdrawal in male but not female rats.
Jerry Meyer, University of Massachusetts, Amherst, Massachusetts, USA
- 9:40 - 10:00AM** The effects of chronic methylphenidate (MPH) administration on cognitive function in juvenile rhesus monkeys.
Merle Paule, National Center for Toxicological Research/FDA, Jefferson, Arkansas, USA
- 10:00 - 10:20AM** Gamma-hydroxybutyric acid-induced deficits in contextual fear conditioning is reversed by NCS-382 in adolescent rat.
Ratna Sircar, The City College of New York, CUNY, New York, New York, USA
- 10:20 -10:50AM** Coffee/Tea Break

SESSION XI: METHAMPHETAMINE - NEUROTOXICITY

Moderators: Jesus Angulo (USA) Diane Miller (USA)

- 10:50 -11:10AM** Role of dopamine receptors in the neurotoxicity of methamphetamine.
Rosario Moratalla, Instituto Cajal, Madrid, SPAIN
- 11:10 -11:30AM** Stress & methamphetamine (METH) neurotoxicity- exposure to the stress hormone corticosterone (CORT) or to *in vivo* stressors produce contrasting effects.
Diane Miller, Center For Disease Control/NIOSH, Morgantown, West Virginia, USA
- 11:30 -11:50AM** Neuropeptide modulation of striatal methamphetamine neural injury.
Jesus Angulo, Hunter College of CUNY, New York, New York, USA
- 11:50 -2:00PM** Lunch - Tejacote Room – First Floor

SESSION XII: ZEBRAFISH

Moderators: Jyotshna Kanungo (USA) and Fumihito Ono (USA)

2:00- 2:20PM Zebrafish embryos exposed to alcohol experience altered locomotion and synaptic activity.

Declan Ali, University of Alberta, Edmonton, AB, CANADA

2:20- 2:40PM Intrinsic properties of larval zebrafish neurons in ethanol.

Fumihito Ono, National Institute on Alcohol Abuse and Alcoholism, Rockville, Maryland, USA

2:40- 3:00PM Neurotoxicity endpoints in high content assays using zebrafish embryos to assess the effects of drugs of abuse.

Jyotshna Kanungo, National Center for Toxicological Research/FDA, Jefferson, Arkansas, USA

3:00-3:20PM Effect of nicotine on motoneuron axons in zebrafish embryos: A high content analysis.

Syed Ali, National Center for Toxicological Research/FDA, Jefferson, Arkansas, USA

3:20 -4:00PM Coffee/Tea Break

SESSION XIII: 4:00 PM – 6:00PM

**PANEL DISCUSSION AND OPEN FORUM
SUMMARY AND RECOMMENDATIONS**

George Koob
Peter Dodd
Emmanuel Onaivi
Susan Schenk
John Mendelson
Eliot Gardner

Michael Kuhar
Silvia Cruz
Barbara Mason
Jean Zwiller
Diane Miller
Oscar Prospéro

6:00 PM CONCLUDING REMARKS/MEETING ADJOURNED
George Koob/Syed Ali

**8:00 - 10:00 PM
FAREWELL DINNER
Pegaso Room -2nd Floor**