



# IDARS NEWS

Newsletter of the International Drug Abuse Research Society

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IDARS President  
George F Koob

Past-President  
Michael Kuhar

Executive Officer  
Syed F. Ali

I want to take this opportunity to congratulate and thank our Executive Officer, Syed Ali for his hard work, vision and dedication in moving IDARS agenda forward. With the promise of extending the IDARS model and mission to other countries, we had the first IDARS Latin American symposium jointly with the 9th and 13th International Brazilian symposium on Alcohol and other drugs and Tobacco treatment respectively . The joint meeting took place in the beautiful city of



Dr. George F. Koob

Rio de Janeiro in September 2010. My plenary lecture on the allostatic model of addiction and the lecture on Drug addiction: How and why does it happen in brain; along with the round table symposia by IDARS members, with the other concurrent sessions were very successful. All sessions were with simultaneous translations of English and Portuguese. We are encouraged by the success of the 1<sup>st</sup> IDARS Latin American conference on drugs of abuse as there has been positive feedback from participants and encouragement to establish collaborations among scientists from Brazil and other Latin American countries with IDARS members. (See pictures from the conference in Rio de Janeiro in this issue of our newsletter).

Our mission is to continue the IDARS initiative in innovative ways to focus on global drug abuse and sharing advances in substance abuse related disorders and therapeutic approaches. Therefore, we plan to continue our International conferences with enhanced communication not only between IDARS members but across drug abuse societies across the globe to create opportunities for us to continue to share ideas and collaborate with others.

Much progress has been achieved in our understanding of the neurobiology of drug abuse and addiction disorders, but much more research is needed to unravel the promise of the new frontiers in genetic variants and epigenetics and the promise of these targets for potential therapeutic strategies in the era of personalized medicine.

At the society for Neuroscience meeting in the fall of 2010, we hope that you can all join us for our get together with a presentation by Dr. Elliot Gardner on drug reward mechanisms. I am also looking forward to IDARS 3rd annual/ISN meeting being planned to take place in Istanbul, Turkey in August 2011.

Yours Truly  
George F. Koob



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**1<sup>st</sup> IDARS Latin American Symposium jointly with Brazilian 9<sup>th</sup> International Symposium on Alcohol and Drugs and 13<sup>th</sup> International symposium on Tobacco Treatment in Rio de Janeiro, September 2010.**



**Opening session of the First IDARS Latin American symposium kicked off with the opening ceremony followed by key note presentation by IDARS President, Dr. George Koob. His presentation was titled, Every Pleasure has its Price: Allostatic Model of Addiction.**



**Some members of IDARS took part in round table presentations on: Psychostimulants addiction and neurotoxicity; Cocaine addiction and potential treatment; Marijuana/Cannabinoids; Novel Neurobiological Targets for the Treatment of Alcoholism. There were other round table concurrent Portuguese-Brazilian Activities, including presentations on smoke free environment and poster presentations.**

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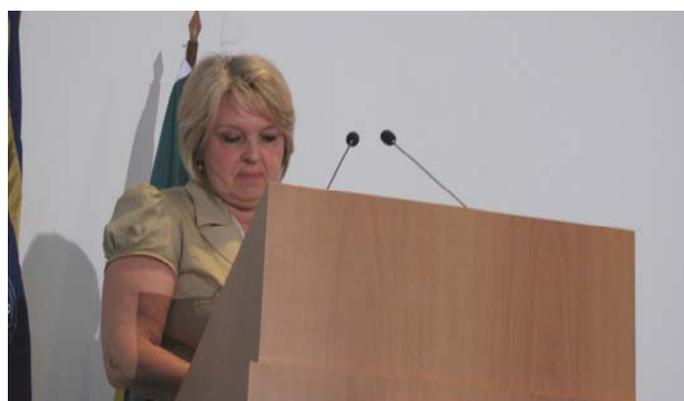
## IDARS Sponsored International symposium on drugs of abuse in Rio de Janeiro: Round table presentations.



**Participants in round table presentations on: Psycho stimulants addiction and neurotoxicity; Cocaine addiction and potential treatment; Marijuana/Cannabinoids; Novel Neurobiological Targets for the Treatment of Alcoholism.**

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## IDARS Sponsored International symposium on drugs of abuse in Rio de Janeiro: Presenters-



**Top L-R: Renato Mussi, Jose Mauro Bras Lima  
Middle L-R, George Koob, Roseli Boerngen de Lacerda  
Bottom L-R, Michael Kuhar, Ratna Sirca**

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## IDARS Sponsored International symposium on drugs of abuse in Rio de Janeiro: Presenters-



**Top L-R: Barbara J. Mason, Syed F. Ali**  
**Middle L-R, Diana B. Miller, James O'Callaghan**  
**Bottom L-R, Teresa Summavielle, Jerrold S. Meyer**

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**Latin American Symposium of the International Drug Abuse Research Society and XIII International Symposium on Tobacco Treatment and IX International Symposium on Alcohol and Other Drugs-**



**Participants and attendees at the conference.**

# Latin American Symposium of the International Drug Abuse Research Society and XIII International Symposium on Tobacco Treatment and IX International Symposium on Alcohol and Other Drugs-



## Poster Session at the Conference

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**Dinner Party of the First IDARS-Latin American Symposium**

## NEONATAL ANESTHESIA: LONG-TERM EFFECTS ON COGNITION?



**Dr. Merle G. Paule**

Medical advances in the treatment of children and pregnant women have resulted in an increase in the frequency, duration and complexity of anesthetic procedures performed in both. To minimize the risks to children resulting from the use of anesthesia, it is necessary to understand the effects of anesthetic drugs on the developing nervous system. Since ketamine is an anesthetic commonly used in neonates and infants, the purposes of our project were to assess the functional consequences associated with a single, 24 hr bout of ketamine anesthesia during the neonatal period by monitoring several complex brain functions in rhesus monkey offspring using a cognitive assessment test battery developed at the USFDA's National Center for Toxicological Research (NCTR). The animals here were anesthetized (n=6) on days 5 or 6 of life, raised by their natural mothers until weaning at 6 months of age, after which they were singly housed (controls were untreated but reared under identical conditions). At 7 months of age, offspring began a structured training program in which they were to learn how to perform several cognitive function tests as part of the NCTR Operant Test Battery (OTB). The particular tasks utilized in the present assessments included those thought to provide measures of visual and spatial discrimination, motivation, learning and short-term memory.

Since several of these behaviors correlate with IQ in children, they clearly represent not only relevant but very important metrics of brain function in our nonhuman primate animal model. Our findings suggest that the ketamine exposed animals learned significantly slower and performed significantly worse in several of these tasks over a considerable length of time (months). Thus, the data have provided proof-of-concept by demonstrating that such exposures can negatively impact the subsequent ability of exposed animals to function normally. Since anesthetics are never given in the absence of some clinical need (surgical procedures, etc.) it remains unknown as to whether similar findings would be observed in animals undergoing concomitant traumatic events. This is highlighted by the observations of others showing that ketamine can ameliorate the adverse developmental effects of painful stimuli that occur during development. *Continued on page 10....*

## Editorial Corner: Welcome to our Newsletter\*

Emmanuel Onaivi, Ph.D., Newsletter Editor IDARS is delighted to publish our electronic newsletter, with information about the society, seeking ideas about our journal, and opportunities for our members. The intention of this newsletter is not only to communicate to you, but also, for you to be able to respond with suggestions for how IDARS may increase its role in your research. Please send us feedback, and get involved! As editor of this newsletter, I invite you to contact me with ideas for articles in future editions, or to volunteer to write an article yourself.

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### NEONATAL ANESTHESIA: LONG-TERM EFFECTS ON COGNITION?

By Dr. Merle G. Paule

Important questions that remain include: What is the threshold duration of anesthesia required to cause these effects? Is this threshold the same as that required to cause abnormal cell death? How long will the noted functional deficits last? What is the exact period of sensitivity for these effects and how will this relate to human development? Can markers of these effects be monitored *in vivo* using newer imaging techniques (microPET, MRI, etc.)? What might be some strategies for preventing or ameliorating the adverse effects associated with the use of anesthetic agents? (Several compounds including L-carnitine and baclofen have shown promise). And, lastly, how will these findings relate to the use of anesthetics in actual surgical or other painful/stressful circumstances and how might these data serve to change actual clinical practice, if at all? (The contents of this presentation do not necessarily reflect the position or opinions of the FDA nor does mention of trade names or commercial products constitute endorsement or recommendation for use. The findings and conclusions in this presentation are those of the author and do not necessarily represent the views of the FDA).

Merle G. Paule, PhD, ATS  
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# IDARS Members in Rio de Janeiro

