***8TH***

***BIENNIAL INTERNATIONAL DRUG ABUSE RESEARCH SOCIETY***

***PROGRAM AND ABSTRACTS***

***Recent Advances in Drug Addiction***

***September 26 - 30, 2022***

***Hyatt Regency Nice Palais de la Mediterranee Hotel***

***Nice, France***

**Conference Organizers:**

**Syed Ali, Nick Gilpin, Olivier Deschaux, Barbara Mason, Sulie L. Chang, Emmanuel Onaivi, Michael Kuhar, Antonio Noronha and**

**George Koob**

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

****

 ****

**Society of Toxicology**

**Department of Pharmacology, Addiction Sciences and Toxicology, UTHSC, Memphis, TN – Alex Dopico**

**Emory University - Michael Kuhar**

**Eliot Gardner**

**Emmanuel Onaivi**

**El-Sholey Inc.**

**NeuroLab International**

**Bowles Center for Alcohol Studies, University of North Carolina at Chapel Hill, Chapel, NC- Fulton Crew**

**Sunday, September 25, 2022**

**REGISTRATION AND WELCOME**

 **3rd Floor**

 **3:00 – 6:00 PM**

**Monday, September 26, 2022**

**8:00 – 2:00 PM Registration in 3rd Floor Conference Area**

**8:00 – 8:20 AM Welcome & Opening Remarks in Conference Room**

 **Travel Award Presentations**

 **George Koob/Syed Ali/Nick Gilpin**

**8:20 – 9:00 AM Plenary Lecture**

 **Closing the Treatment Gap, and Alcohol Use Disorder Perspective**

 **George Koob,** *NIAAA, Baltimore, Maryland, USA*

**Moderator: Michael Kuhar, Emory University, Atlanta, Georgia, USA**

**SESSION I: THE STRESS-SIDE OF ALCOHOL AND OPIOID USE DISORDERS: INSIGHT FROM RODENT AND HUMAN STUDIES**

**Moderators:** **Leandro Vendruscolo (USA) and Barbara Mason (USA)**

**9:20 – 9:40 AM** **Acute effects of Glucocorticoid receptor antagonist Mifepristone on GABA signaling in the central nucleus of amygdala: Impact of alcohol history, Strain and Sex.**

 ***Sophia Khom, Department of Pharmaceutical Sciences, University of Vienna, Vienna, Austria.***

9:40 – 10:00 AM Double-blind placebo-controlled trial of Glucocorticoid receptor antagonist treatment of alcohol use disorder.

 ***Barbara Mason, Department of Molecular Medicine, SCRIPPS Reserach, La Jolla, California, U****SA*

**10:00 – 10:20 AM Converging evidence across species of a role for corticoosteroid sensitization in opioid dependence.**

 ***Leandro Vendruscolo, NIDA-IRP, Baltimore, Maryland, USA*.**

**10:20 – 10:40 AM** Stress-testing decision making in opioid addiction.

 ***Silvia Lopez-Guzman,*** ***NIDA-IRP, Baltimore, Maryland, USA***

**10:40 – 11:00 AM COFFEE/TEA BREAK**

**SESSION II: BRAIN ADAPTATION TO CHRONIC OPIOID USE: FROM RODENTS TO HUMAN**

**Moderators: Renata Marchette (USA) and Daniele Caprioli (Italy)**

**11:00 – 11:20 PM A role of dynorphin and k-opioid receptor systems on hyperalgesia, hyperkatifeia and opioid addiction-like behaviors.**

 ***Renata Marchette,*** *NIDA-IRP, Baltimore, Maryland, USA*

11:20 – 11:40 PM The Impact of continuously high versus intermittently high brain levels of heroin on incubation of craving.

 ***Daniele Caprioli,*** *University of Rome, Rome, ITALY*

**11:40 – 12:00 PM** Acute and chronic effects of opioids on stress and reward processes in the human brain.

 ***Merie Eikemo,*** *University of Oslo, OSLO, NORWAY*

**12:00 – 12:20 PM The brain dopamine system in individuals taking medications for opioid use disorder.**

 ***Peter Manza,*** *NIAAA, Baltimore, Maryland, USA***.**

**12:30 – 2:00 PM LUNCH**

**SESSION III: FLASH TLK- STUDENT & POST-DOC**

**Moderator: Nick Gilpin (USA)**

**2:00 – 2:10 PM Increased mechanical sensitivity following alcohol or sucrose forced abstinence in mice.**

**Gaelle Awad,** *Laboratorie de Neurosciences Cognitives et Adaptatives (LNCA), Universite de Strasbourg, Centre de La Recherche Nationale Scientifique, Strasbourg, FRANCE.*

**2:10 – 2:20 PM** **Andrographolide, an NFk inhibitor, increase cocaine self-administration behavior in rats.**

**Hildenbrand Cecile,** *Laboratorie de Neurosciences Cognitives et Adaptatives (LNCA), Universite de Strasbourg, Centre de La Recherche Nationale Scientifique, Strasbourg, FRANCE*

**2:20 – 2:30 PM Conditioned place preference in Zebrafish: beyond measuring drug reward.**

***Hwei-Hsien Chen,*** *Center for Neuropsychiatric Research, national Health Research Institute, Miaoli, TAIWAN*

**SESSION IV: THE ROLE OF STRESS AND STRESS SYSTEMS IN ALCOHOL DRINKING**

**Moderators: Marcus Weera (USA) and Roberto Ciccocioppo (Italy)**

**2:30 – 2:50 PM Central amygdala-lateral hypothalamus circuitry mediates stress-enhanced alcohol drinking in rats.**

 ***Marcus Weera,*** *Louisiana State University Health Sciences Center, New Orleans, Louisiana, USA.*

2:50 – 3:10 PM Exercise reduces stress-enhanced drinking in alcohol dependent mice: role of BDNF.

#  *Howard Becker*, *Medical University of South Carolina*, *Charleston, South Carolina, USA.*

**3:10 – 3:30 PM Corticolimbic activity and the role of endocannbinoids in modulating stess reactive behaviors and subsequent alcohol drinking.**

 ***Laura Ornelas,*** *University of North Carolina, Chapil Hill, North Carolina, USA*.

**3:30 – 3:50 PM** Individual vulnerability to stress and development of excessive drinking and seeking in the rats.

 ***Esi Domi,*** *University of Camerino, Camerino, ITALY*

**4:00 – 4:20 PM COFFEE/TEA BREAK**

 **SESSION V: PRECLINICAL MODELS OF STIMULANT AND OPIOID USE DISORDERS: MOLECULAR SUBSTRATE AND POTENTIAL THREATMENT STRATEGIES**

**Moderators:** **Jayanthi Sankar (USA) and Jean Lud Cadet (USA)**

**4:20 – 4:40 PM** **Modeling oxycodone use disorder in rats: biochemical and epigenetics consequences.**

 ***Jean Lud Cadet,*** *NIDA-IRP, Baltimore, Maryland, USA*.

**4:40 – 5:00 PM The Dopamine D1/5 antagonist attenuates compulsive methamphetamine intake: involvement of dopaminergic systems and transcriptional mechanisms.**

 ***Jayanthi Sankar****, National Institute on Drug Abuse-IRP, National Institutes of Health, Baltimore, Maryland USA*

**5:00 – 5:20 PM Effects of environmental enrichment and environmental mimetics on drug seeking behavior in rodents.**

 ***Nathalie Thiriet,*** *Universite de Poitiers, Poitiers, FRANCE*

**5:20 – 5:40 PM Sex differences in the effects of abstinence from oxycodone self-administration on PVT to NAc glutamatergic transmission.**

***Yanaira Alfonso-Caraballo,*** *University of Minnesota, Minneapolis, Minnesota, USA.*

**Tuesday, September 27, 2022**

**8:00 – 11:00 AM Registration desk open**

**SESSION VI: CANNABINOIDS AND ALCOHOL: IN-VIVO, EX-VIVO AND IN VITRO EFFECTS IN MICE, RATS AND ZEBRAFISH MODELS**

**Moderators: Anna Bukiya (USA) and Emmanuel Onaivi (USA)**

**8:30 – 8:50 AM** **Effects of simultaneous alcohol and tetrahydrocannabinol on cerebral artery.**

***Anna Bukiya****,* *University of Tennessee Heath Science Center, Memphis, Tennessee, USA*

**8:50 – 9:10 AM** **(-)THC exposure in zebrafish embryos results in altered behavior, physiology and gene expression in next generation animals.**

***Declan Ali***; *University of Alberta, Alberta, Canada*

9:10 – 9:30 AM Unraveling the role of CB2 receptors on midbrain dopaminergic neurons on behavior.

 *Ana Canseco-Alba,* *Institute National de Neurologia y Neurocircugia, México City, México*

9:30 – 9:50 AM Cannabinoids CB2 receptor neuro-immune crosstalk in alcohol consumption.

 *Emmanuel Onaivi,* *NIDA-NIH and William Patterson University, Wayne, New Jersey, USA*

9:50 – 10:10 AM COFFEE/TEA BREAK

**SESSION VII: CANNABINOIDS: microRNAs, INFLAMMATION, ADDICTION AND EXTRACELLULAR VESICLES**

**Moderators: Mitzi Nagarkatti (USA) and Chemio Okoma (USA)**

**10:10 – 10:30 AM scRNASeg and transcriptomic analysis of the role of cannabidiol in neuro- and intestinal inflammation in experimental multiple sclerosis.**

***Prakash Nagarkatti,*** *Department of Pathology, Microbiology and Immunology, University of South Carolina, Columbia, South Carolina, USA*

**10:30 – 10:50 AM Cannabinoids decrease the IncRNA AW112010 that promotes the differentiation of inflammatory T cells by suppressing IL-10 expression through histone demethylation.**

***Mitzi Nagarkatti,*** *Department of Pathology, Microbiology and Immunology, University of South Carolina, Columbia, South Carolina, USA*

10:50 – 11:10 AM Δ9-THC Broad-spectrum antiemetic efficacy of a large dose of temsirolimus against diverse emetogens including the cannabinoid CB1 receptor inverse agonist/antagonist SR141716A.

 ***Nissar Darmani,*** *Western University of Health Sciences, Pomona, California USA*

**11:10 – 11:30 AM Hippocampal mu opioids and cannabinoid 1 receptors are modulated following cocaine self-administration in male rats.**

***Katia Befort****, Claboratorie de Neurosciences Cognitions et Adaptatives (LNCA), CNRS, Universite de Strasbourg, Strasbourg, France*

**11:30 – 11:50 AM SIV and delta-9-THC induced alterations in host miRNAome: insights from extracellular Vesicles.**

 ***Chioma Okeoma,*** *Department of Pathology, Microbiology and Immunology, New York Medical College, Valhalla, New York, USA*

12:00 – 2:00 PM LUNCH BREAK

**SESSION VIII: Alcohol, Opioid, Nicotine and Cocaine: New Mechanistic Complexities and abundant opportunities for improving Therapy**

**Moderators: Eliot Gardner (USA) and Alex Dopico (USA)**

**2:00 – 2:20 PM A novel skin cell-based therapy for alcohol and/or cocaine use disorder.**

 *Ming Xu*, *Department of Anesthesia and Critical Care, The University of Chicago, Chicago, Illinois, USA*

**2:20 –2:40 PM Is Brain Ghrelin a New Target for Anti-Addiction Medication?**

 ***Eliot Gardner,*** *NIRP, NIDA-NIH, Baltimore, Maryland, USA.*

2:40 – 3:00 PM Alcohol and pregnenolone interaction on cerebrovascular potassium channels of the BK type: a tale of two ligands and two channel subunits.

***Alex Dopico,*** *Department of Pharmacology, Addiction Science, and Toxicology, The University of Tennessee Health Science Center, Memphis Tennessee, USA*

 **3:00 – 3:20 PM Pharmacological properties of opioids are dependent on the G subunit mediating opioid receptor signaling.**

***Jean Bidlack,*** *Department of Pharmacology and Physiology, University of Rochester, School of Medicine and Dentistry, Rochester, New York, USA.*

**3:20 – 3:40 PM Boosting nicotine replacement efficacy with monoaminergic co-treatments.**

***Ed Levin,*** *Department of Psychiatry and Behavioral Sciences, Duke University Medical Center, Durham, North Carolina, USA.*

**3:40 – 4:00 PM COFFEE/TEA BREAK**

**4:00 – 5:00 PM IDARS Business Meeting**

 **George Koob, Michael Kuhar, Nicolas Gilpin, Emmanuel Onaivi, Syed Ali**

**Wednesday, September 28, 2022**

**Conference Tour of Nice & Monaco**

**No Scheduled Conference activities**

**Thursday, September 29, 2022**

**SESSION IX: FROM MOLECULE TO CIRCUITRY IN DRUG ADDICTION**

**Moderators: Marisela Morales (USA) and Alban de Kerchove (Belgium)**

**8:30 - 8:50 AM** Dorsal Raphe glutamatergic inputs to VTA and cocaine seeking behavior.

 ***Marisela Morales,*** *NIDA-IRP, Baltimore, Maryland, USA*

**8:50 - 9:10 AM** VTA dopamine neuronal heterogeneity and morphine.

 ***Barbara Juarez*,** University of Maryland, Baltimore*, Maryland, USA*

**9:10 - 9:30 AM Mesolimbic dopamine signatures of relapse**

 ***Gavan McNally,*** *School of Psychology, University of New South Wales, AUSTRALIA*

**9:30 – 9:50 AM Histone H2A monoubiquitination in the thalamas regulates cocaine use disorder.**

 ***Alban de Kerchove d’Exaerde,*** *Directeur de Recherche, Fund forScientific Research, FRS-FNRS, WELBIO, Neurosceince Institute, Universite Libre de Bruxelles, Brussel, BELGIUM*

**10:00 - 10:20 AM COFFEE/TEA BREAK**

**SESSION X: HOW REINFORCEMENT LEARNING SHAPES ADDICTION BEHAVIOR**

**Moderators:** **Celine Nicolas (FRANCE) and Brendan Tunstall (USA)**

10:30 – 10:50 AM Fos-expressing neuronal ensembles in rat infralimbic cortex encode initial and maintained oxycodone seeking in rats.

 *Brandon Warren, Department of Pharmacodynamics, University of Florida, City, USA.*

 **10:50 – 11:10 AM Intermittent access to operant self-administered alcohol promotes more “binge-like” alcohol consumption in rats.**

***Brendan Tunstall,*** *Department of Pharmacology, Addiction Science, and Toxicology, The University of Tennessee Health Science Center, Memphis Tennessee, USA*

**11:10 – 11:30 AM Sex differences on incubation of cocaine craving after continuous and intermittent cocaine self-administration.**

 ***Celine Nicolas*,** *University of Bordeaux, INSERM, Bordeaux, FRANCE*

**11:30 – 11:50 AM Evidence for Heroin-induced social isolation in the rats.**

 ***Daniele Caprioli***, *Department of Physiology and Pharmacology, Sapienza, University of Rome, Rome, ITALY.*

**11:50 – 12:10 PM Backtranslation of human cocaine use patterns in rats.**

 ***Morgan James****,* *Department of Psychiatry, Robert Wood Johnson Medical School, Rutgers University, Rutgers, New Jersey, USA.*

**12:20 – 2:00 PM LUNCH**

**SESSION XI: CLINICAL AND PRE-CLINICAL VIEWS ON THE CONTRIBUTION OF THE INSULAR CORTEX TO ADDICTION**

**Moderators: Anna Beyeler (France) and Wolfgang Sommer (Germany)**

**2:00 - 2:20 PM Insular mechanisms distinguishing flexibility phenotypes.**

 ***Donna Calu,*** *University of Baltimore, Baltimore, Maryland, USA*

2:20 - 2:40 PM Network analysis of brain activity in humans and rats implicates the insula in alcohol addiction.

 ***Wolfgang Sommer,*** *University of Heidelberg, Heidelberg, GERMANY*

**2:40 – 3:00 PM Anterior insula cortex inputs to the dorsolateral striatum govern the maintenance of binge alcohol drinking.**

 ***Brady Atwood,*** *Indiana University School of Medicine, Indianapolis, Indiana, USA*.

**3:00 - 3:20 PM** Asexual dimorphism of the posterior insular cortex in alcohol binge and compulsive drinking in mice.

 ***Celine Nicolas,*** *University of Bordeaux, INSERM, Bordeaux, FRANCE*

**3:20 - 3:40 PM COFFEE/TEA BREAK**

**SESSION XII: INTERORGAN AND INTER CELLULAR CROSS TALK IN**

 **HIV AND DRUG ABUSE MEDIATED NEUROPATHOGENESIS**

**Moderators: Sabita Roy (USA) and Shilpa Buch (USA)**

3:40 – 4:00 PM Morphine mediated Neuroinflammations: Role of Astrocyte derived extracellular Vesicles.

 ***Shilpa Buch,*** *University of Nebraska Medical Center, Omaha, Nebraska USA*

**4:00 – 4:20 PM Brain and lung injury caused by alcohol and electronic cigarettes: Mechanisms of Deleterious effects on the blood brain and alveolar endothelial barriers.**

 ***Yuri Persidsky,*** *Department of Pathology and Laboratory Medicine, Temple University Health Science Center, Philadelphia, Pennsylvania, USA*

**4:20 – 4:40 PM Opioid Induced Dysregulation of Gut Microbiota and Systemic Inflammation Accelerate HIV-Associated Premature Aging in a Mouse Model of HIV.**

 ***Umakant Sharma,*** *Department of Surgery, University of Miami, Miami, Florida, USA*

4:40 – 5:00 PM Morphine mediated Neuroinflammation involves astrocyte-specific activation of NLRP6 inflammasome signaling via miR-152.

***Palsamy Periyassamy,*** *University of Nebraska Medical Center, Omaha, Nebraska USA*

5:00 – 5:20 PM Methamphetamine impairs neurogenesis of neural progenitor cells via activation of the FOXO3 signaling and induction of inflammatory reactions.

***Michael Toborek,*** *Department of Biochemistry and Molecular Biology, University of Miami Scholl of Medicine, Miami, Florida, USA*

**5:20 – 5:40 PM Microbiome implications in opioid withdrawal: Consequences of HIV infection.**

 ***Sabita Roy,*** *Department of Surgery, University of Miami, Miami, Florida, USA.*

**Friday, September 30, 2022**

**SESSION XIII: EXTRACELLULAR VESICLES, EPIGENETICS, NEUROIMMUNE SIGNALING, AND ALCOHOL**

**Moderators: Antonio Noronha (USA) and Fulton Crews (USA)**

# 8:30 - 8:50 AM Epigenetics shifts in microglial and neuronal phenotype following adolescent intermittent ethanol (AIE) exposure in human AUD.

***Fulton T. Crews***, *Bowles Center for Alcohol Studies, University of North Carolina at Chapel Hill, Chapel, North Carolina, USA*

**8:50 - 9:10 AM** **Identifications of exosomal cargo molecules involved in microglia induced neuronal death during ethanol-induced pathogenesis in the hypothalamus of fetal rats.**

***Dipak Sarkar***; *Rutgers Endocrine Research Program, Department of Animal Sciences, Rutgers University School of Environmental and Biological Sciences, New Brunswick, New Jersey, USA*

**9:10 - 9:30 AM** **Network meta-analysis on the mechanisms underlying alcohol-induced antinociception and pain.**

***Sulie L. Chang****, Institute of NeuroImmune Pharmacology, Department of*

 *Biological Sciences, Seton Hall University, South Orange, New Jersey, USA*

9:30 – 9:50 AM Extracellular vesicles, microglia, and epigenetics as potential therapeutic targets for AUD pathology.

 *Leon Coleman, Department of Pharmacology, School of Medicine, University of North Carolina at Chapel Hill, Chapel, North Carolina, USA.*

**9:50 - 10:10 AM** **Inflammatory pain induces alcohol intake increase after forced abstinence in female rats: unravelling the role of the mu opioid receptor and neuroinflammation crosstalk.**

***Lucia Hipolito****, Department of Pharmacy and Pharmaceutical Technology and Parasitology, University of Valencia, Burjassot, Spain.*

**10:10 – 10:30 AM COFFEE/TEA BREAK**

**SESSION XIV: SIGMA-1 RECEPTOR REGULATION AND ADDICTION**

**Moderator: Hsian-en Wu (USA) and Yuko Yasui (USA)**

10:30 – 10:50 AM Sigma-1 receptor confers protein translational regulation after neuropathic pain.

 *Hsian-en Wu, Cellular Pathobiology Section, INRB, IR, NIDA, NIH, Baltimore, Maryland, USA*

**10:50 – 11:10 AM Sigma-1 receptor regulation of steroid hormones at the adrenal gland.**

 ***Nino Sharikadze***, *Cellular Pathobiology Section, INRB, IR, NIDA, NIH, Baltimore, Maryland, USA*

11:10 – 11:30 AM Sigma-1 receptor regulates energy metabolism by Impacting the NAD/NADH ratio: Potential relation to addiction.

 *Simon Couly, Cellular Pathobiology Section, INRB, IR, NIDA, NIH, Baltimore, Maryland, USA*

11:30 – 11:50 AM Cocaine-induced functional deficit in orbitofrontal cortex is prevented by systemic administration of a sigma-1 receptor antagonist.

 *Yuriko Kimura, Cellular Pathobiology Section, INRB, IR, NIDA, NIH, Baltimore, Maryland, USA*

11:50 – 12:10 pm Sigma-1 receptor is involved in cocaine-induced AMPA receptor synaptic plasticity in the VTA dopamine neurons.

 *Yuko Yasui, Cellular Pathobiology Section, INRB, IR, NIDA, NIH, Baltimore, Maryland, USA*

**12:20 – 2:00 PM LUNCH**

**SESSION XV: ALCOHOL DEPENDENCE AND TOXICITY IN ADOLESCENT AND ADULTHOOD.**

**Moderators: Yousef Tizabi (USA) and Youssef Sari (USA)**

2:00 – 2:20 PM Overview of behavioral and neurobiological effects of alcohol.

 *Yousef Tizabi, Department of Pharmacology, Howard University Scholl of Medicine, Washington DC, USA.*

 **2:20 – 2:40 PM Adolescent ethanol exposure alters the adult response to drug of abuse.**

***Sheketha Hauser,*** *Indiana university School of Medicine, Indianapolis, Indiana, USA.*

**2:40 – 3:00 PM Neurocircuits involved in alcohol dependence: neuropharmacological studies.**

 ***Youssef Sari*,** *College of Pharmacy, University of Toledo, Toledo, Ohio, USA.*

**3:00 – 3:20 PM Alcohol consumption in adolescents vs adults: differences in attitudes, consequences and treatment.**

 ***Burk Getachew***, *Department of Pharmacology, Howard University Scholl of Medicine, Washington DC, USA.*

**3:20 – 3:40 PM COFFEE/TEA BREAK**

**SESSION XVI: IIDENTIFICATION OF NOVEL MECHANISMS UNDERLYING ALCOHOL, OPIOID, AND NICOTINE ADDICTION USING SINGLE-CELL WHOLE-BRAIN IMAGING**

**Moderators: Olivier George (USA)**

3:40 – 4:00 PM Normalization of the functional connectome in alcohol dependent mice following treatment with a CFR-1 antagonist.

 *Lieselot Carrette,* *Preclinical Addiction Research Consortium, Department of Psychiatry, UC San Diego, La Jolla, California, USA.*

 **4:00 – 4:20 PM Whole Brain mapping of neuronal ensembles of oxycodone seeking.**

***Alexander Smith,*** *Nash Family Department of Neuroscience, Icahn School of**Medicine at Mount Sinai, New York, New York, USA****.***

**4:20 – 4:40 PM Delineating the insula-centric negative affective circuitry engaged by stress and alcohol exposure.**

 ***Samuel Centanni*,** *Wake Forest University School of Medicine, Winston-Salem, North Carolina, USA.*

**4:40 – 5:00 PM Hyperconnectivity of long-range cholinergic regions contributes to the reorganization of the brain functional connectivity during nicotine withdrawal.**

 *Olivier George*, *Preclinical Addiction Research Consortium, Department of Psychiatry, UC San Diego, La Jolla, California, USA.*

**SESSION XVII: 5:00 – 6:00 PM**

 **PANEL DISCUSSION, SUMMARY & RECOMMENDATION**

 **Barbara Mason, Nick Gilpin, Fulton Crews, Sulie L. Chang, Alex Dopico, Mitzi Nagarkatti, Eliot Gardner Marisela Morales, Yuri Persidsky, Anna Beyeler, Antonio Noronha, Olivier George and Syed Ali**

**7:00 - 10:00 PM**

**FAREWELL DINNER**

**Poolside Terrace**