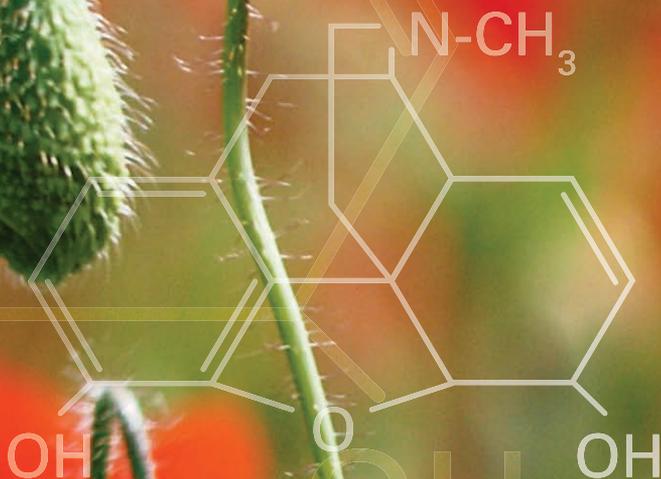


*Join us in Celebrating
the Opening of the*

Nebraska Center for Substance Abuse Research

Thursday, October 29, 2015 | 8:00 a.m. - 12:00 p.m.

Durham Research Center Auditorium 1002





Overview

Substance abuse leading to addiction continues to be one of the most devastating problems facing communities throughout the United States and worldwide. Addiction, in turn, negatively impacts not only the normal functioning of an individual but also increases the susceptibility of the addicts to infectious diseases such as HIV, hepatitis and tuberculosis. The underlying pathways for addiction and the ability of the addictive drugs to co-operate with infectious agents, thereby eliciting exacerbated disease pathogenesis, remains poorly understood. Moreover, effective treatment modalities for preventing and treating addiction are limited. This necessitates an urgent need in the field to focus on disease mechanisms underlying the biological processes of drug addiction and/or infection.

The goal of the Nebraska Center for Substance Abuse Research is to promote and facilitate research in drug abuse and neurodegenerative diseases with a focus on cell signaling, behavioral assessments and development of models of drug addiction. We will serve as a nexus for enhancing research capacity by recruiting faculty, postdocs and students (clinical and basic sciences) as well as build bridges with clinical departments utilizing the benefits of academic medicine at UNMC.

This symposium brings together national leaders who will address the need for specialized centers across various medical centers and also present current research on the mechanisms involved in nicotine uptake, opioid modulation of gut-brain axis, nicotine use and abuse, clinical research in substance abuse disorders and the role of dendritic cells as HIV reservoirs. This forum will enable the communication of state-of-the-art knowledge and how cross-fertilization of overlapping expertise allows us to find ways to address ongoing issues.

Program Sponsors

Nebraska Center for Substance Abuse Research Center

University of Nebraska Medical Center Development Fund (PI: Shilpa Buch, Ph.D.)

Agenda

- 8:00-8:10 a.m. WELCOME AND OPENING REMARKS**
Shilpa Buch, Ph.D., *Director, Nebraska Center for Substance Abuse Research*
University of Nebraska Medical Center
- 8:10-8:25 a.m. REMARKS...**
Jennifer Larsen, M.D., *Vice Chancellor for Research*
University of Nebraska Medical Center

Ali S. Khan, M.D., M.P.H., *Dean, College of Public Health*
University of Nebraska Medical Center

Steve Lisco, M.D., FCCM, FCCP, *Chairman, Department of Anesthesiology*
University of Nebraska Medical Center
- SESSION 1**
8:25-9:00 a.m. Howard S. Fox, M.D., Ph.D. *Moderator* | University of Nebraska Medical Center
William L. Dewey, Ph.D.
Virginia Commonwealth University
The Potential and Need for a Drug Abuse Research Center on Medical Campuses
- 9:00-9:35 a.m.** Paul Kenny, Ph.D.
Mount Sinai Hospital, New York
Habenular Regulation of Nicotine Intake
- 9:35-10:10 a.m.** Sabita Roy, Ph.D.
University of Minnesota
Opioid Modulation of Gut Microbiome-Immune-Brain Axis: Implications in Opioid Tolerance, Hyperalgesia and Dependence
- 10:10-10:30 a.m. BREAK**
- SESSION 2**
10:30-10:45 a.m. Howard E. Gendelman, M.D. *Moderator* | University of Nebraska Medical Center
Siddappa Byrareddy, Ph.D.
University of Nebraska Medical Center
Role of Follicular Dendritic Cells as Potential Viral Reservoirs: Role in HAND
- 10:45-11:10 a.m.** Rick Bevins, Ph.D.
University of Nebraska Lincoln
Smoking and Having a Good Time: Can Such Experiences Change the Abuse Liability of Nicotine?
- 11:10-11:25 a.m.** Ming Li, Ph.D., University of Nebraska Lincoln
Preclinical Research on Nicotine Use in Schizophrenia
- 11:25-11:40 a.m.** Kathleen Grant, M.D.
VA Nebraska-Western Iowa Health Care System (Omaha site)
Substance Use Disorders Clinical Research: Underserved and Understudied Populations
- 11:40-12:00 p.m. CLOSING REMARKS**
Shilpa Buch, Ph.D.
University of Nebraska Medical Center

Remarks...



Jennifer Larsen, M.D.
Vice Chancellor for Research
University of Nebraska Medical Center



Ali S. Khan, M.D., M.P.H.
Dean, College of Public Health
University of Nebraska Medical Center



Steve Lisco, M.D., FCCM, FCCP
Chairman, Department of Anesthesiology
University of Nebraska Medical Center



Shilpa Buch, Ph.D.

*Department of Pharmacology and
Experimental Neuroscience
University of Nebraska Medical Center*

Dr. Shilpa Buch is a professor and vice chair in the department of pharmacology and experimental neuroscience at the University of Nebraska Medical Center. She is also the director of the Nebraska Center for Substance Abuse Research at UNMC.

Her primary research focus is aimed at understanding the molecular mechanism(s) by which drugs of abuse, such as cocaine and morphine, co-operate with HIV-1/HIV proteins to enhance progression of HIV-1 associated neurological disorders (HAND). Specifically, her research involves a multipronged approach comprising of in vitro cell systems, complementary rodent models, the higher more relevant macaque model of SIV pathogenesis and archival human tissue, to dissect the signaling pathways crucial in central nervous system pathogenesis that is triggered by the host-virus interplay. More recently, her research is centered on exploring the molecular pathways by which microRNAs, small noncoding RNAs that shuttle in extracellular vesicle cargos, regulate gene expression and cellular cross-talk. Work from her group has also shed light on novel therapeutic strategies, such as delivery of platelet-derived growth factor-C chain in mitigating neuroinflammation and associated synaptodendritic injury observed in HAND.

Over the past 15 years, Dr. Buch has been an active member of NIH study sections and considers it her privilege to “finally be able to give back to NIH after continuing to be its beneficiary for many years.” Dr. Buch has won numerous awards for her research and has published extensively in the field of HIV and drug abuse.

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William L. Dewey, Ph.D.

*Department of Pharmacology and Toxicology
Virginia Commonwealth University*

Bill Dewey earned his B.S., M.S. and Ph.D. from Siena College, The College of Saint Rose and The University of Connecticut, respectively. He did postdoctoral work at The University of North Carolina and later became an Assistant Professor of pharmacology at that institution. In 1972 he

was recruited to Virginia Commonwealth University (VCU) and has served as Director of the Graduate Program, Vice Chair for Research, Vice Chair of the department and now Chair of the department of pharmacology and toxicology. He also served as Associate Dean and later as Dean of the School of Basic Health Sciences, Assistant Dean of the Graduate School and for twelve and a half years as Associate Provost and then Vice President for Research and Graduate Studies. He served as Executive Director of the Virginia Biotechnology Research Park and currently serves as President of The Friends of the National Institute on Drug Abuse and for over 20 years as Chair of the National Advisory Board of the Research Center for Minority Institutions at Florida A&M University and the Consumer Advisory Board for the Partnership for People with Disabilities at VCU. Bill served as the President of The College on Problems of Drug Dependence, the American Society for Pharmacology and Experimental Therapeutics and the Federation of American Societies for Experimental Biology. He served simultaneously as the director of three training grants from three different NIH institutes and one of these training grants has been funded for 40 consecutive years. NIH has funded his investigator-initiated research continually for more than 44 years, including the years he served in the central administration of the university. His research has concentrated on the functional role of endogenous substances, including neurotransmitters, opioids, calcium, and CGRP (calcitonin gene-related peptide) in the mechanism of action of morphine and other abused substances. Working with Dr. Edwin Myer, neurology department, VCU, they discovered that an increase in endogenous opioids occurred in sudden infant death syndrome (SIDS); this led to the use of naltrexone for the treatment of SIDS and other diseases with centrally induced respiratory depression. In addition to his opioid work, he has contributed significantly to pharmacology and the understanding of the mechanism of tolerance to marijuana. Pat and Bill Dewey will be married 55 years in October. They have six children and 13 grandchildren.

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Paul Kenny, Ph.D.

*Pharmacology and System Therapeutics
Mount Sinai Hospital New York*

Dr. Kenny is the Ward-Coleman Professor and Chairman of the department of pharmacology and systems therapeutics at the Icahn Schools of Medicine at Mount Sinai in New York. Dr. Kenny is also director of the Experimental Therapeutics Institute at Mount Sinai, and co-founder of Eolas

Therapeutics Inc. He received a degree in biochemistry from Trinity College Dublin and his Ph.D. in psychopharmacology from King's College London. He completed his post-doctoral training in neuropharmacology at The Scripps Research Institute in La Jolla, California. Research in Dr. Kenny's laboratory is focused on the molecular neurobiology of drug addiction, obesity and schizophrenia. Dr. Kenny is also involved in efforts to develop novel small molecule therapeutic agents for the treatment of drug addiction and other psychiatric indications. Dr. Kenny is a handling editor for the *Journal of Neuroscience* and a member of the National Advisory Council on Alcohol Abuse and Alcoholism (NIAAA). Dr. Kenny has won numerous awards for his research and has published extensively on the mechanisms of drug addiction.

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Sabita Roy, Ph.D.

*Department of Surgery
University of Minnesota, Minneapolis*

Dr. Sabita Roy obtained her Ph.D. in 1986 in neurobiology from the University of Kansas Lawrence, followed by postdoctoral training at the University of California, San Francisco (1986-1988) and University of Minnesota, Minneapolis (1988-1990). She currently is professor and vice chair for

Career Development and associate director of Basic and Translation Division in the department of surgery at the University of Minnesota, Minneapolis. She has extensive administrative experience and more than 20 years of research experience in drug abuse research.

She is the past president of the Society for NeuroImmune Pharmacology. She has served as a permanent member of the NeuroAIDS study, chair of NIH program project review committee, served on several Special Emphasis Panels and currently is a full member of the SAT study section. Additionally, she also serves on several non-NIH grant review committees (local, foundational grants and DOD) and is on the editorial board of the *Journal of Neuroimmune Pharmacology* and *Journal of NeuroVirology*.

Dr. Roy has an extensive track record in fostering collaborative and interdisciplinary research, mentoring junior investigators (pre and post-doctoral trainees) and junior faculty both at the departmental and university level. She was recently awarded a Senior Scientist Research and Mentorship Award (K05). Dr. Roy has more than 100 peer-reviewed publications, 25 review articles, and eight book chapters. She has three active R0-1 grants and a R-25 diversity training grant. She is the co-Director of a T32 training grant funded by National Institute of Drug Abuse.

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“The interdisciplinary capabilities and approaches that will come together in the center will make UNMC a leader in combatting the plague of substance abuse that brings pain and suffering to so many.”

Bradley Britigan, M.D.
Dean, UNMC College of Medicine



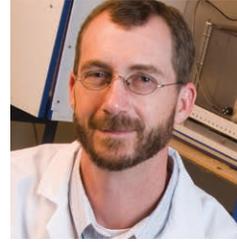
Siddappa Byrareddy Ph.D.

*Department of Pharmacology and
Experimental Neuroscience
University of Nebraska Medical Center*

Dr. Siddappa Byrareddy is an associate professor in the department of pharmacology and experimental neuroscience and the Nebraska Center for Substance Abuse Research at the University of Nebraska Medical Center, Omaha, Nebraska. Dr.

Byrareddy has published more than 50 peer-reviewed publications in the field. His research interests include the development of new strategies to protect the gut and CNS from HIV/SIV infection.

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Rick Bevins, Ph.D.

*Department of Psychology
University of Nebraska-Lincoln*

Dr. Bevins received a Ph.D. in neuroscience and behavior in 1993 from the University of Massachusetts at Amherst. After completing a postdoctoral fellow position at the University of Kentucky, he joined the psychology department at the University of Nebraska-Lincoln and established

the Behavioral Neuropharmacology Laboratory in 1996. He is currently Willa Cather Professor and Chair of Psychology at UNL. He has an extensive track record investigating the underlying behavioral and neural causes of drug addiction, publishing over a 125 papers in the area, along with 2 edited books. He serves as editor of Behavioral Pharmacology and Neuroscience for the *Journal of the Experimental Analysis of Behavior* and the associate editor for *Pharmacology Biochemistry and Behavior*. Over the past 15 years, he has served on numerous review and advisory panels for the National Institute on Health (NIH). His research program has been funded by NIH for nearly 20 years and includes grants from the National Institute on Drug Abuse, the National Cancer Institute and National Institute on Mental Health. His former graduate and post-doctoral trainees are professors and research scientists at institutions across the country and in the United Kingdom.

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“Substance abuse continues to be a problem both in the region, nationally and around the world. We hope this center will bring together a broad array of expertise needed to understand and better address the consequences of drug abuse as we work together toward better treatments and prevention.”

Jennifer Larsen, M.D.
Vice Chancellor for Research UNMC



Ming Li, Ph.D.

*Department of Psychology
University of Nebraska-Lincoln*

Dr. Ming Li received his B.S. and M.S. in psychology from Beijing University in 1991 and 1996, respectively. He received his Ph.D. in psychology from the University of Toronto (Canada) in 2002 and joined the University of Nebraska-Lincoln faculty in the fall of 2005 after

completing a postdoctoral training at Centre for Addiction and Mental Health (Toronto). His main research areas are: animal models of schizophrenia, neuropsychopharmacology of antipsychotic drugs, neurobiology of maternal behavior and comorbidity of nicotine use in schizophrenia. His lab takes a preclinical approach using pharmacological (e.g. selective agonists or antagonists), neuroscience (e.g. microinjection, immunocytochemistry), genetic (e.g. viral vectors) and behavioral techniques to achieve the research goals. His work has been supported by research grants from the federal and state funding agencies, and by several charitable organizations.

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Kathleen Grant, M.D.

*Department of Internal Medicine
Department of Psychiatry
University of Nebraska Medical Center
VA Nebraska-Western Iowa Health Care System
(Omaha site)*

Dr. Grant is a clinician-researcher whose research interests include treatment of nicotine dependence in persons who have other substance use disorders, alcohol and methamphetamine use disorders, treatment of addictive disorders in understudied and underserved rural, corrections and Latino populations and the intersection between violence/trauma and substance use disorders.

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“I enthusiastically support this new center on substance abuse as it will further enhance collaborations between UNMC and UNL to address an important societal problem.”

Prem Paul, D.V.M., Ph.D.
Vice Chancellor for Research and Economic Development
University of Nebraska-Lincoln





Howard S. Fox, M.D., Ph.D.

*Department of Pharmacology and Experimental Neuroscience
University of Nebraska Medical Center*

In 2008, Dr. Howard Fox moved to the department of pharmacology and experimental neuroscience (PEN) at the University of Nebraska Medical Center. He is currently professor and executive vice-chair in the PEN department and senior associate dean for

research and development for the College of Medicine at UNMC. He directs the Chronic HIV Infection and Aging in NeuroAIDS (CHAIN) Center (P30, NIMH) and the University of Nebraska Center for Integrative and Translational Neuroscience (CITN), as well as NIH R01 grants.

Dr. Fox's work has focused on knowledge learned from the SIV/nonhuman primate model of neuroAIDS. In addition to functional, neuropathologic and neuroimmune findings, he has integrated high-density data acquisition and analysis through transcriptomic, proteomic and metabolomic technologies with a systems biology approach. Recent findings have led to a new focus on brain mitochondria. His lab is now probing the role of mitochondria in normal physiological functions, aging and neurodegenerative diseases.

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Howard E. Gendelman, M.D.

*Department of Pharmacology and Experimental Neuroscience
University of Nebraska Medical Center*

Dr. Gendelman joined UNMC in 1993 and is the Margaret R. Larson Professor of Internal Medicine and Infectious Diseases and chair of the pharmacology and experimental neuroscience department at UNMC. Dr. Gendelman's research

has contributed significantly to elucidating the role that mononuclear phagocytes play in disease-associated brain metabolism and associated neural cell damage. He has led the field of cell-based drug delivery. His works have had broad implications in developing the means to prevent, slow or reverse infectious, metabolic and degenerative disorders of the nervous system.

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Acknowledgments

University of Nebraska Medical Center

Department of Pharmacology and
Experimental Neuroscience

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