



NEWSLINE

A PUBLICATION OF THE COLLEGE ON PROBLEMS OF DRUG DEPENDENCE, INC.

Volume Fourteen, Number One • September 2009

CPDD President's Column

LINDA PORRINO, Ph.D.

PRESIDENT

This is my first column as President of CPDD and I want to start by thanking Dr. Sharon Walsh for the amazing job she did over the past year as President. We all owe Sharon a huge debt of gratitude for all of her hard work and dedication to the College over the past year. It is fortunate for me that she will continue on the Executive Committee, so that I will have her to turn to for advice as I take over this year. I am very honored to be CPDD President because this organization has been my scientific home for many years. I have learned much about the science of substance abuse from our meetings and from the colleagues and friends that I have come to know over the years. But perhaps most important, I have learned how committed the members of CPDD are to the mission of the College. This is a remarkable organization because of the hard work and dedication of all of its members. I will do my best to follow in the long line of exceptional leaders that have given so much of their time and energy to this organization.

These are interesting times for substance abuse research and science in general. They are both stimulating and anxiety-provoking at the same time. The advent of a new administration in Washington has brought new faces to the landscape. I want to take this chance to highlight a few of them. First, we have a new NIH director, Francis Collins. As I am sure that you know, Dr. Collins was the director of the National

Human Genome Research Institute and has written widely about the intersection of science and faith. We are just beginning to get an idea about Dr. Collins' priorities, but the continued focus on big science will present real challenges to the "R01" culture that has been the foundation of biomedical research for so long. CPDD, along with other scientific organizations and nonprofit advocacy groups, was invited to participate in a meeting with Dr. Collins where he discussed his plans for the future of NIH and took questions and comments. Marty Adler represented our organization at that meeting last week. I will update you on it in our next newsletter.

Tom McLellan was sworn in as Deputy Director of the Office of National Drug Control Policy in August. Tom is a friend of many of us and to CPDD. He will be a terrific advocate for substance abuse research. We are all glad to see Tom in this role, but of course he did have to resign as President-Elect to take on this job. CPDD's loss is, however, our nation's gain. Tom will be coming to our meeting in June to share his insights with us.

Many of us have spent much of our spring and summer writing grants and supplements and then reviewing all of these. As an update on the current status of the NIH Recovery Act grants, NIDA's ARRA allocation was \$261,000,000, but there is also substantial support from the

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NIH Office of the Director, which was a separate allocation of money. Of the 20,000 Challenge grants received by the NIH, NIDA received about 550 applications and almost 130 GO Grant applications. All Challenge, GO and P30 faculty recruitment awards will be issued by September 30, 2009. NIDA has awarded over 40 summer student and teacher research experience supplements. To date, a total of 296 awards have been made by NIDA under the auspices of the Recovery Act. To see a complete list go to <http://projectreporter.nih.gov/reporter.cfm>.

Another issue of high priority for CPDD and its members is the potential merger of NIDA and NIAAA. The first meeting of the NIH Scientific Management Review Board was in April, 2009. The minutes of this meeting and videocasts of the comments by NIDA and NIAAA can be found on the NIH web site

<http://smrb.od.nih.gov/meetings.asp>. In addition, a list of the members of the working group on Substance Use, Abuse and Addiction is there as well. It is well worth your time to check out what has been said and who is involved. The next meeting of the working group is a Public Forum scheduled for later this month. CPDD has been asked to participate in this meeting and I will be attending as the CPDD representative. If any of you have comments or input that you would like for me to consider, please send those to me. I will have a full update in the next issue.

Plans for the upcoming meeting in Scottsdale in June, 2010 are beginning to take shape. The President’s Lecture will be presented by Stephen J. Suomi. Dr. Suomi is chief of the Laboratory of Comparative Ethology at the Eunice Kennedy Shriver National Institute of Child Health and Human Development

in Bethesda, Maryland. His research involves how early life experiences, in particular relationships with mothers and caregivers, can influence adult physiological and behavioral functioning. He has focused on the interaction of genetic background with the early social environment to determine individual differences in temperament and vulnerability to psychiatric disorders. His work has enormous implications for substance abuse treatment and prevention. Dr. Suomi is a very engaging speaker, so I hope that all of you will be able to attend his talk.

The deadline for proposals for symposia and workshops for the upcoming meeting is fast approaching, October 15th to be exact. I hope that all of you are thinking about this. Our meetings in recent years have had exceptional programs. This is the result of the very hard work of our Program Committee, chaired by Sari Izenwasser, and all of you as well. Our program is as good as the symposia, workshops and presentations that we propose and present at our meeting. I expect that this year will be no exception. The information and forms are on our web site <http://www.cpdd.vcu.edu/Pages/Meetings/PastMeet.html>. We are looking forward to another exceptional meeting.

I want to close by thanking all of you who participated in last year’s meeting in Reno with special thanks to Ellen Geller. I have new respect for all that Ellen does for us now that I have spent the last year planning my daughter’s wedding. She does so much that we do not even notice simply because she does it so well.



2009 NIDA Mini-Convention

Friday, October 16, 2009 • The Palmer House Hilton, Chicago, IL

Grand and State Ballrooms

8:00 a.m. – 6:25 p.m.

The Mini-Convention will feature outstanding scientists presenting recent findings and discussing future directions in the neurobiology of drug abuse and addiction. The Mini-Convention includes: four symposia, the SfN Jacob Waletzky Memorial Lecture and a poster session for early career investigators.

- Registration
- Welcome: Nora D. Volkow
- Non-Cannabinoid Receptor-Mediated Actions of Endo-Cannabinoids
Speakers: Ken Mackie, Mary Abood, Ken M. Hargreaves and Daniele Piomell
- Jacob P. Waletzky Memorial Lecture
- Delayed Neurobiological Plasticity in Drug Abuse and Chronic Pain
Speakers: Julie Blendy, Bruce Hope, David Borsook, and Michel Barrot
- Early Career Investigators Poster Session and Lunch
- Epigenetics, Central Nervous System Function and Disease
Speakers: Nathaniel Heintz, Paul J. Kenny, and Li-Huei Tsai
- Neurotrophic Factors and Drug Addiction
Speakers: Maart Sarma, Yavin Shaham, David W. Self, and Jacqueline F. McGinty

Conference registration is \$38. For registration or additional information, please see the web site: <http://seiservices.com/nida/frontiers2009/> or contact JoAnn Ross at jross@seiservices.com

Award Deadlines

Nathan B. Eddy Award

Marian W. Fischman Award

Joseph Cochin Award

Mentorship Award

J. Michael Morrison Award

February 1, 2010

CPDD/NIDA Media Award

November 1, 2009

Visit the CPDD web site for award description and information about nominations.
<http://www.cpdd.org>

Meeting Highlights – The 2009 Marian W. Fischman Award

This award in memory of Marian W. Fischman, a much admired leader in drug abuse research and an excellent scientist, was established in 2001 to recognize the contributions of an outstanding woman scientist in drug abuse research.

2009 Awardee: Harriet de Wit, Ph.D.

Harriet de Wit is a Professor in the Department of Psychiatry and Behavioral Neuroscience at the University of Chicago. She grew up in Calgary, Canada, and obtained her doctorate from Concordia University in Montreal. For the past 28 years, Dr. de Wit has conducted research on the psychopharmacology of drugs of abuse in human volunteers. Her research, funded by the National Institute on Drug Abuse, includes a diverse portfolio of topics, such as individual differences in acute responses to drugs, effects of drugs on impulsive behavior, and interactions between drugs and acute stress. Dr. de Wit has been active in several professional organizations, and she serves as a Field Editor for *Psychopharmacology* and Deputy Editor of *Alcoholism: Clinical and Experimental Research*. She has also been a mentor to graduate students and fellows, and until recently, served on the NIDA Training and Career Development Subcommittee.

Introduction by Chris-Ellyn Johanson, Ph.D.

I am very pleased to have the opportunity to present Harriet de Wit with this year's Marian W. Fischman Memorial Award. Not only is Harriet deserving of this award, but the pleasure is heightened because Harriet is from the University of Chicago where Marian was trained and began her early career. Furthermore, Harriet had direct contact

with Marian at Chicago and personally benefited from her mentorship.

I have known Harriet for a long time and have had the pleasure of watching her develop into a senior scientist. She came to the University of Chicago in 1981 after earning her Ph.D. with Jane Stewart at Concordia University in Montreal. This work included the development of the reinstatement model in rats and early work using the self-administration paradigm to assess the ability of agents selected on the basis of their mechanism of action to decrease drug-taking behavior. I was very impressed by this work and time has proven its importance for modeling relapse and the development of medications for treating substance abuse. I asked Harriet to join the Chicago group to work on some studies that I had begun conducting on the self-administration of stimulants and depressants in humans. Although Harriet had no experience doing human research, she learned quickly and soon became indispensable both technically and intellectually. When I left the University in 1986, I turned over our grant to her and, astonishingly, that same grant is still active today.

Harriet is a highly regarded researcher, and her presentation will highlight her major accomplishments. I will not try to summarize them but instead only mention the work that particularly resonates with me. When we worked together, Harriet became interested in individual differences in the subjective and reinforcing effects of amphetamine and diazepam, and this interest has been maintained throughout her career. This focus is particularly noteworthy because



Harriet de Wit (left) receives The Marian Fischman Award from Chris-Ellyn Johanson (right).

Marian W. Fischman Award *continued from page 4*

behavioral analysis as a discipline has tended to ignore such differences, believing that tight behavioral control can be achieved in every organism. This may be true in the animal laboratory, but such control is not ethically or practically possible in human studies. Thus, individual differences become obvious and, rather than lament about these differences, Harriet focused on trying to understand the variables that might be responsible for such differences. Her work has included studies on the impact of differences in drug history, expectancies, sex, hormonal state, stress, and personality on the subjective effects of a wide variety of drugs. Her work on impulsivity has been highly innovative and has attempted to unravel the interaction between drug effects and types of impulsivity. That is, not only is she interested in how differences in impulsivity among participants might affect their subjective response to drugs but as well how the drugs themselves alter impulsivity. More recently Harriet has been assessing how differences in genotype alter the subjective responses to drugs. This is difficult work and demonstrates two major characteristics of Harriet that I believe have contributed to her success. First, she had to learn a whole new area of research, genetics, and second, she had to forge a collaborative effort among researchers from disparate fields.

Harriet has other characteristics that have made her a successful scientist. She is extremely hard-working and diligent. You can always rely on her to finish what she has promised. She is sensitive and fair with her colleagues and has a high degree of integrity. Harriet agonizes over research design and has developed some incredibly clever strategies, particularly for looking at bidirectionality between drugs and other factors. She has also worked hard for her field professionally as an editor and by serving on national review committees and within

professional societies. Harriet's career accomplishments reflect the values that Marian professed, so it is particularly fitting that she is receiving this award.

Acceptance Remarks by Dr. de Wit

It is truly an honor to receive this prestigious award from CPDD, and to be able to participate in the legacy of Marian Fischman, one of the true pioneers of our field. I feel privileged to have worked with Dr. Fischman during our overlapping years in the Department of Psychiatry at the University of Chicago, from 1981 to 1985. Marian, together with Chris-Ellyn Johanson, taught me the basics of conducting drug abuse research with human volunteers and provided me with sound training in the experimental analysis of behavior. Marian set a high standard of scientific rigor and ethical responsibility in conducting research with human volunteers. She was a caring, enthusiastic and outspoken woman scientist who served as a role model and mentor to numerous trainees, both male and female. She supported trainees with immense warmth and commitment, and a ready sense of humor, creating a wonderful academic community. She was admired for her rigorous approach to studying behavior, and for her ability to articulate clearly and forcefully the science behind the issues in public settings.

It is also an honor to receive such a generous, personal introduction from Dr. Johanson. Marian Fischman and Chris-Ellyn Johanson were the closest of friends and colleagues, when I met them in 1981. Although Chris-Ellyn was my primary supervisor when I came to the University of Chicago, we shared many experiences, both academic and personal, with Marian. Now, I am grateful that I can share with Chris, and her husband Bob, the wonderful memories of our times with Marian, to keep them alive and precious.



Harriet de Wit

Addiction Science Fair Award

Travel Award Deadlines

NIDA Women & Sex/Gender Junior Investigator Travel Awards

December 7, 2009

Early Career Investigator Awards

December 10, 2009

CSAT Travel Awards

January 10, 2010

Primm-Singleton Minority Travel Awards

November 1, 2009

WHO/NIDA/CPDD

International Traveling Fellowships

January 15, 2010

NIDA Director's Travel Awards

March 18, 2010

Visit the CPDD web site for information, applications, and other information
<http://www.cpdd.org>

For the second year, high school students received awards for exemplary projects in Addiction Science presented at the Intel International Science and Engineering Fair. The National Institute on Drug Abuse in partner with the non-profit organization, *Friends of NIDA*, sponsored the awards as part of its ongoing support of NIDA research into the causes, consequences, and treatment of drug abuse and addiction. The first-place winner received \$2500, the second-place winner received \$1500, and the third-place winner received \$1000.

Sehar Anjum Salman and Jada Nicole Dalley, two 16-year-old juniors at Keystone High School in San Antonio, Texas won the first-place Addiction Science Award for their project, "A Cytogenic Analysis of Genetic Mutation Induced by Cigarette Smoke in *Drosophila Melanogaster*." They measured the frequency of genetic mutations in *Drosophila melanogaster* that had been exposed as larvae to a piece of foam previously saturated with tobacco smoke. They observed a surprisingly high rate of mutations, many of which point to genes that could improve our understanding of the deleterious effects of environmental tobacco smoke exposure in humans. These studies are unique and interesting as little is known about the effects of third-hand smoke on human health, and because they designed and executed an outstanding project without access to a college-level laboratory.

Winning second place was Daniel Jeffrey Martin, a 17-year-old junior from Desert Vista High School in

Phoenix, Arizona, for his project, "The Effect of Human Methamphetamine Usage on Carnivore Scavenging." His mother, a forensic scientist, mentioned anecdotal evidence that carnivores avoided bodies of people whose autopsy revealed the presence of methamphetamine. Martin conducted a retrospective analysis of data from a local medical examiner's office to demonstrate that carnivorous animals indeed do not scavenge the remains of humans known to have abused methamphetamine. This study has interesting implications for forensic science, such as flagging potential cases of drug involvement.

The third-place Addiction Science Award went to 18-year-old Lucia Mocz, a senior at Mililani High School in Mililani, Hawaii for her project, "Complex Evaluation of Danger and Tranquility in Urban Settings: An Immunocomputing Intelligence Approach." She developed an artificial intelligence algorithm to generate highly detailed maps that integrated correlated indicators of danger and tranquility in the urban region of her hometown. Her project has many applications and may lead to better understanding of how environmental factors relate to patterns of drug abuse, and how they influence the risk and consequences of drug abuse in the community.

NIDA has developed a special section on its web site to help science fair entrants understand the criteria for the awards. The pages include other resources on addiction science. <http://www.drugabuse.gov/sciencefair/>

Meeting Highlights – The 2009 Joseph Cochin Young Investigator Award

This award, in memory of a highly esteemed leader in drug abuse research and a former Chairman and Executive Secretary of CPDD, was established in 1986 to recognize research contributions in any facet of the field of drug abuse. It is given annually to an investigator who has not attained his/her 40th birthday by July 1 in the year of the award.

2009 Awardee: Laura M. Bohn, Ph.D.

Dr. Laura M. Bohn is an Associate Professor with tenure in the Department of Molecular Therapeutics at the recently established Scripps Research Institute in Jupiter, Florida. Laura received undergraduate degrees in both Chemistry and Biochemistry from Virginia Polytechnic Institute and then went on to acquire her Ph.D. in Biochemistry and Molecular Biology from St. Louis University School of Medicine in January, 1999, under the guidance of Dr. Carmine Coscia. She received post-doctoral and research faculty training in the laboratory of Dr. Marc Caron, HHMI investigator, at the Duke University Medical Center, where she also benefited from close collaborations with Dr. Robert Lefkowitz.

Dr. Bohn accepted a faculty position at The Ohio State University College of Medicine in the Departments of Pharmacology and Psychiatry in 2003, where she achieved tenure in 2007 before moving to the Scripps Research Institute in March, 2009. She has been active in training graduate students, teaching medical courses, serving on study sections for both NIH and NSF and is an associate editor for the journal *Life Sciences*. Dr. Bohn's training has been sponsored by the National Institute on Drug Abuse in the form of graduate student, postdoctoral fellow, and early career investigator training awards. Laura has authored over 40 publications,

3 book chapters and holds one international patent. She is the recipient of the Women in Neuroscience / Society for Neuroscience Career Development Award and The College on Problems of Drug Dependence Travel Award. Laura lives in Jupiter, Florida, with her very supportive husband Mark and her two energetic children, Elijah (age 3) and EdenRose (age 1).

Introduction by Steve Negus, Ph.D.

On behalf of her nominators Linda Dykstra, Mary Jeanne Kreek and Bill Dewey, it is my pleasure to introduce Laura Bohn as the winner of the 2009 Joseph Cochin Young Investigator Award. Laura received her undergraduate degrees in Biochemistry and Chemistry from Virginia Polytechnic Institute (Virginia Tech) in Blacksburg, VA and her PhD in Biochemistry and Molecular Biology from the St. Louis University School of Medicine, in St. Louis, MO. Her predoctoral training was funded by a fellowship from the National Institute on Drug Abuse (NIDA). She received postdoctoral training at Duke University where she was supported by an individual NRSA training fellowship from NIDA. She rose to the position of Assistant Research Professor at Duke before moving on to start her independent research laboratory. Dr. Bohn joined the faculty in the departments of Pharmacology and Psychiatry at Ohio State University where she received tenure in 2007. This past spring, she joined the faculty as a tenured Associate Professor in the Department of Molecular Therapeutics at the Scripps Research Institute in Jupiter, FL.

Laura's research has focused on the molecular mechanisms of receptor activation and signal transduction, primarily in the opioid system, and she has played an especially influential role in describing the role of β -arrestins in receptor-mediated signaling. For example, she found in her early work that β -arrestins



Laura Bohn (center) receives The Joseph Cochin Award from CPDD President Sharon Walsh (right) and Steve Negus (left).

2009 Joseph Cochin Award *continued from page 7*

dampen signaling through G-protein coupled pathways in processes that contribute in important ways to opioid tolerance. More recently, she has discovered that β -arrestins also play a pro-signaling role to channel the effects of receptor activation into novel transduction pathways in vivo. As a result, her work has raised our awareness to the fact that the family of proteins we know as G-protein coupled receptors actually do much more than their name implies. Laura's work has been supported by predoctoral and postdoctoral fellowships, a K-award and an R01 from NIDA, and she has published more than 40 manuscripts, reviews and book chapters in such first-rate journals as *Science*, the *Journal of Neuroscience*, *PNAS*, and *JPET*.

As an important part of her research, Laura has been an active mentor, colleague and collaborator, and I would like to share with you a small excerpt from Linda Dykstra's letter of nomination. Linda worked with Laura on a project at Duke, and Linda writes: "During the year in which I worked closely with Dr. Bohn, I was particularly impressed to see that both new as well as more established investigators consistently sought her out for her broad research expertise as well as her knowledge in a range of areas. In fact, I often comment that Dr. Bohn served as my mentor during the year we worked together, rather than the other way around. Her ability to provide training at a number of levels--from the explanation of broad concepts, to assistance with technical aspects of data collection and analysis--is superb. Her willingness to take the time to share her expertise with numerous individuals is even more commendable."

Laura has also been recognized by several awards including the 2002 CPDD Early Career Investigator Award and the 2005 Career Development Award from the Society of Neuroscience's Committee on Women in Science. Please join me now

in congratulating Laura for her receipt of the 2009 Joseph Cochin Young Investigator Award.

Acceptance Remarks by Dr. Bohn

In the interest of time, I'll be brief. First, I would like to thank the committee for selecting me for this award and my nominators, for their nomination and mostly, for their ongoing friendship. I have benefited tremendously from interacting with each of them. Mary Jeanne Kreek was a co-sponsor on my K01 mentored-investigator career award from NIDA. I was always very grateful for her insights and feedback regarding not only my research endeavors, but also my career path. Her laboratory door has always been open and I always feel welcome when I visit New York. I am fortunate to know her as a colleague and friend. I had the most amazing opportunity to work closely, on a daily basis, with Dr. Linda Dykstra when she decided to spend a sabbatical with Dr. Marc Caron while I was a post-doc in the laboratory. Linda and I spent hours developing the least biased protocol we could for assessing CPP in mice (this included visits to the craft supply store - an exercise reminiscent of "Girl Scouts" at one point...). Although she was maintaining her duties as Dean of the Graduate School at UNC-Chapel Hill, she still hung around to clean cages at the end of the day. I am happy that we shared those experiences and glad that we continue to share tales of our adventures.

I would also like to acknowledge NIDA, for their funding and for the fact that they have always taken an active interest in my career development. Soon after starting my faculty position, Dr. Eliane Lazar-Wesley invited me to begin reviewing for NIDA-K, the study section that, at that time, reviewed all training and career grant applications for NIDA. That opportunity presented me with a tremendous learning experience and also with the opportunity to work with Dr. Bill Dewey. During the 4 years I spent



Laura M. Bohn

NIDA Director's Report to CPDD: Progress, Challenges, and Opportunities at NIDA

Nora D. Volkow, M.D., Director, National Institute on Drug Abuse

This year, I will start by giving a brief summary of how the American Recovery and Reinvestment Act of 2009 (ARRA) can impact substance abuse research (<http://www.hhs.gov/recovery/overview/index.html>). I will then address some ongoing programs and conclude with some challenges and opportunities.

American Recovery and Reinvestment Act of 2009

The NIH received 20,000 Challenge Grant applications. Funding of the NIDA Challenge Grant applications will come from both the \$200,000,000 NIH set aside and also from NIDA's ARRA allocation. NIDA also received a number of GO Grant applications and P30 faculty recruitment applications all of which will be awarded by September 30, 2009. To date, more than 300 awards have been made by NIDA under the auspices of the Recovery Act. To see a complete list go to <http://projectreporter.nih.gov/reporter.cfm>. NIDA identified two major goals to highlight for support under ARRA: 1) Eradicate Tobacco Abuse and Addiction and 2) Understand How Genes Influence the Development and Morphology of the Human Brain.

Eradicate Tobacco Abuse and Addiction. Tobacco use is the leading cause of preventable death in the United States, associated with nearly half a million deaths per year. World-wide, that toll rises to five million deaths each year and if current smoking patterns continue globally, tobacco use will kill 10 million persons annually by 2020. In addition it contributes significantly to a wide array of medical conditions (i.e., pneumonia, coronary heart, cardiovascular and lung diseases, cancers, sudden infant death syndrome, prematurity, ADHD, addiction). Though public health interventions and biomedical advances have led to dramatic reductions in tobacco use, the prevalence of nicotine addiction remains unacceptably high and exorbitantly expensive. There is also a huge gap between the amount of money spent in development of treatment interventions for nicotine addiction and the amount spent on treatment for its health consequences. This highlights the urgent need for additional research in therapeutics for nicotine addiction. Under this Signature Project we will prioritize research on novel pharmacotherapeutic agents and vaccines to treat tobacco addiction through two strategies. One is to promote research into new antibody-based approaches (i.e., vaccines) to boost or enable the body's immune system to mount an effective response against nicotine before it reaches the brain to block its rewarding effects. A nicotine vaccine has the potential to reduce the morbidity and mortality of tobacco use by preventing progression to addiction in those who seek to initiate tobacco use and by facilitating cessation in those who seek to stop smoking. The other is to tap into the vast potential of novel compounds and in-license discoveries (e.g., chemical libraries) for the development of new medications for smoking cessation.

How do genes influence the development and morphology of the human brain? In this Signature Project, NIDA seeks to merge genetics data with brain morphology data, specifically as it changes through development. Although the typical range and timing of brain morphological changes that occur during normal human development are becoming better characterized, we have a poor understanding of how the interplay between genes and environment shapes human brain development. Moreover, we still have very little knowledge of the genes expressed in neurons and glia during different stages of brain development. Normative data are needed so that brain development can be correlated with individual environmental and genetic factors. Such data would be invaluable as a basis for understanding



Nora Volkow

NIDA Director’s Report *continued from page 9*

(1) the contribution of specific genes to neuropsychiatric disorders and (2) how exposure to certain environmental factors can trigger disease in those that are genetically vulnerable. Studies in animal models that capitalize on genetics, such as transgenics and defined genetic mutants, and on comparisons across species to quickly validate the discoveries of the clinical studies and to help identify genes that distinguish the brain complexity between the species are also a high priority. The success of this program will require novel bioinformatic approaches and algorithms capable of extracting meaningful information out of the overlaying of growing genomic and imaging databases (both preclinical and clinical), particularly across periods of active brain development. Equally critical will be the ability of this program to spur and support intensely collaborative studies by a diverse array of interdisciplinary scientists. If successful, this strategy will generate critical information about normal brain development and the biological precursors and correlates of complex brain disorders, such as ADHD, autism, schizophrenia, and drug addiction.

Continuing priority areas for NIDA

Obviously we will not be able to fund all the proposals that will arrive in response to ARRA requests. Therefore, it is important to emphasize that investigators should consider resubmitting those proposals through the regular granting mechanisms. Our main role continues to be that of facilitators and I encourage you to get in touch with NIDA program officers.

Beyond the transient opportunities afforded by ARRA, NIDA’s core research priorities continue to lie in the areas of prevention research (e.g., children and adolescent genetics/epigenetics, brain development, environments, social neuroscience, and comorbidity), treatment interventions (e.g., identification of new medication targets and development of new therapeutic strategies), and HIV/AIDS research in substance use disorders.

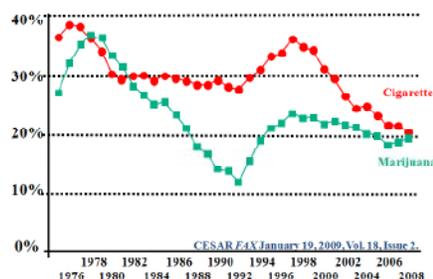
Ongoing programs: latest key developments

Epidemiology. The Monitoring the Future (MTF) survey queries a nationally representative sample of high school students and provides regular and key insights into the magnitude of the drug problem in our nation and good indications as to the direction and nature of underlying trends. The MTF reported in 2008 that declines in use of any illicit drug continued to accumulate across years to become significant, both statistically and substantively. These translate into significant declines in the percent of students reporting past month use of illicit drugs (from about 20% in 2001 to about 15% in 8th, 10th and 12th grades combined). This trend is particularly significant because it pertains to a stage in life of high risk with drug experimentation and addiction.



Nora Volkow

Percentage of U.S. 12th Grade Students Reporting Past Month Use of Cigarettes and Marijuana: MTF DATA



Over the past 10 years cigarette smoking has decreased by almost 50% in highschool students

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The survey also reports that cigarette smoking rates among American teens in 2008 are at the lowest levels since at least as far back as the early 1990s. Over the past 10 years cigarette smoking has decreased dramatically by almost 50% in high school students. Across the three grades combined, there was a decline in monthly smoking prevalence from 13.6 percent in 2007 to 12.6 percent in 2008. These findings go against a long-held notion that smoking prevention interventions were not working in this age population.

Genetics. We have now convergent evidence supporting the notion that the CHRNA5/A3/B4 nicotinic subunit gene cluster in chromosome 15 is associated with nicotine dependence. Nicotine research in the past mostly concentrated on the nicotinic receptor A4, A7 and B2 subunits. We know comparatively little about the contribution of the A5, A3, and B4 subunits, and we do not have good selective agonists or antagonists for these receptor subtypes. Hopefully, researchers will soon develop compounds that selectively target these receptors.

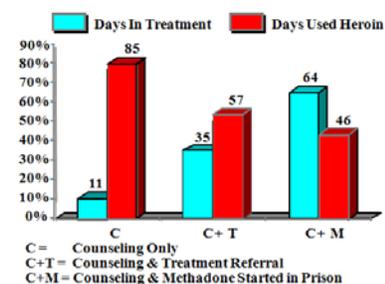
Scientists are already beginning to address the likely functions of the CHRNA5/A3/B4 nicotinic receptor subunits. These subunits are highly expressed in the pedunculopontine nucleus and in the habenula, which points to the potential relevance of these brain regions in modulating vulnerability to nicotine addiction. Recent work with transgenic mice supports the role of the A5 subunit in mediating withdrawal responses to nicotine. Specifically, mecamylamine induced somatic signs of withdrawal in wild-type mice but not in the A5 knock-out mice. This finding highlights the relevance that withdrawal may have as a contributing factor to the vulnerability to nicotine addiction. Thus, it is very likely that new investments in this direction could lead to important new discoveries *vis à vis* the nicotine addiction process as well as in the development of new pharmacotherapeutic candidates.

Treatment Development. The number of newly funded and ongoing clinical trials at NIDA has grown in spite of flat budgets. However, encouraging investigators to do the necessary preclinical and clinical studies to evaluate new compounds remains a challenge. It is urgent that we develop better medications and treatment interventions. As of 2003, most of the investments on medication research at NIDA were for cocaine and opiate addiction. Since then, NIDA has expanded its portfolio to encourage research on the development of medications for cannabinoid, nicotine, and methamphetamine addictions. NIDA has also expanded its pharmacotherapeutic approach; we are encouraging the development of broader spectrum agents that target functional processes that are common to all addictions (i.e., to treat craving, to enhance the reinforcing effects of non-drug reinforcers, etc.).

In addition, there is ongoing research on vaccines and immunization therapies. Last year, I presented data from ongoing clinical trials of the cocaine vaccine. This year, I will turn to nicotine vaccines. Of these, the vaccine developed by NABI Pharmaceuticals (NicVAX) with initial support from NIDA (funded Phase I and II trials) is ready to go for Phase III. The results so far are promising and show that subjects who generate high levels of anti-nicotine antibodies can sustain higher quit rates than placebo-treated or subjects who could not mount a robust response. In addition, high antibody titers were associated with significantly reduced cigarette consumption among non-abstainers. This finding is important because it dispels the notion that the generation of high antibody titers would trigger compensatory smoking behaviors. Importantly, high antibody titer was also correlated with less intense withdrawal symptoms.

Services research. It is also important to deploy and deliver treatments broadly, effectively, and in a sustained manner. In 2007, an estimated 22.3 million Americans were

Treatment Linkage & Days Used Heroin 6 Months Post-release



Source: Gordon, MS et al., *Addiction* 103:1333-1342, 2008.

Treating Addiction in the Criminal Justice System is Cost-Effective



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dependent on or abused an illicit drug or alcohol but only 3.9 million (17%) of these individuals had received some type of treatment in the past year (2007, NSDUH, National Findings; 2008, SAMHSA, OAS). This makes no clinical nor economic sense in light of the evidence showing that addiction treatment works and that it is cost effective, particularly within the criminal justice system. In 2007, an estimated 7.3 million adults in the US were involved in the criminal justice system, but, in spite of the fact that almost 70% of them presented with substance abuse problems, only 18% had access to any type of addiction treatment. This is a badly missed opportunity since studies show that very simple interventions (1 month of post-release counseling + methadone treatment, for example) have a major impact, both in reducing drug use and in decreasing reincarceration, while, at the same time, saving money.

Another missed opportunity is the lack of involvement of the healthcare system in the prevention and treatment of substance abuse disorders. However, several factors are now converging that make the present a uniquely suited time for engaging the healthcare system:

- Passage of the Paul Wellstone and Pete Domenici Mental Health Parity and Addiction Equity Act of 2008.
- As of January, 2008 there are insurance codes for reimbursement of screening and brief intervention services for privately insured patients and Medicare patients.
- The American Board of Addiction Medicine (ABAM), the nation's first board for certifying physicians across different specialities in addiction medicine, awarded certificates to over 800 physicians in 2009.
- While the abuse of illicit drugs has declined over the past 10 years in our country the abuse of psychotherapeutics has increased (particularly for opioid analgesics). Since these are medications prescribed by physicians, the potential for their diversion and abuse can not be ignored by the healthcare system. Development of strategies to recognize those at risk and treat those that become addicted will require the involvement of the medical community.

To take advantage of this confluence of events, NIDA has made concerted efforts to engage the medical community. One such initiative is NIDAMED; a resource guide (adapted from the World Health Organization (WHO) Alcohol, Smoking and Substance Involvement Screening Test (ASSIST), Version 3.0) intended to provide clinicians serving adult populations in general medical settings, with the screening tools and procedures necessary to conduct screening, brief intervention, and/or treatment referral for patients who may have, or be at risk of developing, a substance use disorder (<http://www.drugabuse.gov/nidamed/resguide/>). The Web-based interactive tool guides clinicians through a short series of screening questions and, based on the patient's responses, generates a substance involvement score that suggests the level of intervention needed. The tool also provides links to resources for conducting a brief intervention and treatment referral, if warranted. Screening and brief intervention provides an opportunity for clinicians to intervene early and potentially enhance medical care by increasing awareness of the likely impact of substance use on a patient's overall health.

Challenges and Opportunities

HIV/AIDS. Substances of abuse play an important role in the transmission and dissemination of HIV/AIDS. The International AIDS Society has now officially recognized that targeting substance abuse is a critical step towards getting rid of the HIV epidemic. As

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**Meeting Deadlines
Proposals for Symposia
and Workshops are due:**

October 15, 2009

Abstracts are due:

December 1, 2009

*Visit the CPDD web site for
submission forms,
guidelines, and other
meeting information
<http://www.cpdd.org>*

NIDA Director's Report *continued from page 12*

a field, we have a unique opportunity to help prevent and treat HIV through targeted investments in addiction and basic research. The following are relevant research areas for this mission.

- The need for a better understanding of the interactions between drugs and the HIV virus as they relate to brain function, impact on the immune system, and how they may induce deleterious epigenetic changes.
- The need to better understand the pharmacological dimension of how all these factors interact with antiretroviral therapy.
- The need to further develop targets on prevention and treatment, recognizing the shifting nature of the epidemic in the United States that is increasingly impacting non-IDU populations.
- The need to expand access to HIV rapid testing and counseling in drug abuse treatment environments.

To transform these concepts into realities, NIDA has launched in 2008 the new "Avant Garde Award", which is similar to the NIH-wide Pioneer Award but focused on supporting innovative researchers in the area of substance abuse and HIV. In addition, NIDA's Clinical Trials Network (CTN) has been very proactive in translating scientific finding into the community by implementing a trial to test the implementation of HIV rapid testing in community treatment programs for substance abusers.

Engagement of the medical community. In addition to the obvious links with infectious diseases like HIV and HVC, there are many other opportunities to engage the interest of the medical community for substance use disorders. One of these has to do with the fact that the second most frequently abused class of drugs in this country are psychotherapeutic drugs, specifically, pain medications, stimulants and benzodiazepines. Particularly worrisome are opiate analgesics, which have a high incidence of fatalities associated with overdose, and are highly prevalent among teenagers. When trying to understand these trends we want to pay particular attention to the number of prescriptions that are being written, which has risen dramatically. The Verispan data, for example, shows that dentists are (by far) the number one prescribers of opiate analgesics for adolescents. Dentists report that these are being prescribed mostly in the context of molar extraction. But when we look at the data more closely we discover that 60% of those prescriptions were actually for refills, so the explanation requires further refinement. We need better education and a better understanding of prescription practices. CTN is discussing a potential partnership with the dentist networks supported by the Dental Institute to identify potentially better clinical practices that may help foster best practices and minimize the abuse of opiate analgesics.

Finally, although there is some data showing that screening and brief intervention in drug use disorders in primary care setting works, the data is still very limited. To help provide further evidence, the CTN is working on a protocol that will evaluate screening and brief intervention and referral treatment (SBIRT) in Emergency Departments.

2009 Joseph Cochin Award *continued from page 8*

reviewing for NIDA-K, I learned a great deal from Bill about how to be critical, yet still encouraging and fair. For all of these opportunities I am grateful. Thank you.

Drug Discrimination and Self-Administration Databases Combined

They are now available at:
www.drugrefs.org

The former drug discrimination database can still be accessed at www.dd-database.org but it is not being updated.

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Meeting Recap

For the 71st Annual Scientific Meeting of the College on Problems of Drug Dependence, we gambled on a new venue: Reno/Sparks, Nevada. In spite of the global economic situation, the meeting was well attended, with 1289 registrants representing 46 countries and territories. After the US, the highest number of attendees came from Canada (33), Australia (26), Brazil (16), France (15), Spain (13), Israel and Japan (9 each). By category, there were 421 members, 550 non-members, and 172 pre-docs, the remaining number made up of social registrants, satellite meeting attendees, and exhibitors.

The well-rounded program offered 19 symposia, 22 oral communication sessions, 4 poster sessions, and 12 workshops, in

Editor's Notes

This issue I will be talking about a variety of communication issues. First, CPDD's journal **Drug and Alcohol Dependence** is doing well with a remarkable 714 submissions over the past year and an increase in its impact factor to 3.371. On a related note, there is a newly revised resource available to assist people with publishing substance abuse data which has been put together under the auspices of the International Society of Addiction Journal Editors entitled, "Publishing Addiction Science: A Guide for the Perplexed (2nd edition)." The book is available online at: <http://www.parint.org/isajeweb/site/isajebook2.htm>. Information on obtaining a paper copy of the book is posted on that site as well.

That brings me to consider a major issue in communication, which is what medium should we use to convey information about the society. There is a continuing tension between those who like to literally hold on to what they are reading and those concerned

addition to the Plenary, Late-Breaking Research News, Fischman Award Lecture, and a Public Policy Forum. In addition, there were several pre-meeting satellite conferences (NIDA International Forum on Building International Research on Drug Abuse, International Study Group Investigating Drugs as Reinforcers, Center for Substance Abuse Treatment, and Treating Addiction During Pregnancy). The entire program is available online at CPDD.org).

We hope to see you next year, June 12-17th, for the 72nd Annual Scientific Meeting of the CPDD at the Fairmont Scottsdale in Scottsdale, AZ!

-- Contributed by Ellen B. Geller

about the personal and social cost of printing and shipping issues of DAD to all members. Indeed, whether CPDD will continue to have paper copies of DAD sent to all members, or whether it will opt for electronic copies will be an issue to be discussed when the contract with Elsevier (the publisher of DAD) is renegotiated.

In addition, there are an increasing number of information venues becoming available. As more and more people use forms of communication such as blogs, the microblogging site Twitter and social networking sites such as FaceBook and MySpace, a move to utilize such venues for communication among CPDD members becomes more attractive. It will become important to discuss which of these venues will be useful for society communication. If you have ideas or strong feelings on the matter, please contact me or Gregory Miller, chair of the publications committee (gmler@hms.harvard.edu).
-- Contributed by Michael B. Gatch, Ph.D.