Director’s Report to the National Advisory Council on Drug Abuse

September 6, 2012
In Memoriam

Toni Shippenberg-Stein, Ph.D.
NIDA IRP Senior Investigator and Chief, Integrative Neuroscience Branch

June 25, 2012
Jack B. Stein, Ph.D.
Director, Office of Science Policy & Communication (OSPC)

Formerly -- Chief, Prevention Branch ONDCP
Office of Demand Reduction

Susan Weiss, Ph.D.
NIDA Associate Director for Scientific Affairs

Formerly – Acting Director, OSPC
Director’s Report to the National Advisory Council on Drug Abuse

• Budget Update

• What’s New @ HHS/NIH?

• Recent NIDA Activities & Events
<table>
<thead>
<tr>
<th></th>
<th>2011</th>
<th>2012</th>
<th>2013 PB</th>
<th>CR</th>
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<tbody>
<tr>
<td>NonAIDS</td>
<td>$731,428</td>
<td>$732,822</td>
<td>$732,838</td>
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<td>AIDS</td>
<td>$317,348</td>
<td>$319,292</td>
<td>$321,163</td>
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<td>TOTAL</td>
<td>$1,048,776</td>
<td>$1,052,114</td>
<td>$1,054,001</td>
<td>$1,052,114</td>
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Increase Over Prior Year:
- NonAIDS: -1.0%
- AIDS: 0.3%
- TOTAL: 0.2%
- CR: 0.3%
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### “NISUAD” Plan Development Timeline

- **June 2011 - Fall 2012**: Gather input from stakeholders
- **February 2012**: Request for Information published
- **Spring 2012**: Conduct a series of virtual meetings

#### Spring/Summer 2012:
- Conduct regional town hall meetings and teleconferences with targeted sets of stakeholders

- **Fall 2012**: Release of Draft Scientific Strategic Plan and public comment period

- **December 2012**: Recommendations to NIH Director

- **January/February 2013**: Include President’s FY 2014 Budget
  - Begin implementing Scientific Strategic Plan not dependent on reorganization

- **October 2013**: National Institute of Substance Use and Addiction Disorders (NISUAD)*
“NISUAD” Update

Many organizations, both federal and non-federal, were invited to meet with Dr. Tabak to learn about the new institute & to provide input into the new IC’s Mission--two “stake holders” meetings were held over the summer.

The following groups participated:

**July 31:**
- APA Office of Ethnic Minority Affairs
- Native Research Network, Inc.
- National Highway Traffic Safety Administration
- International Certification & Reciprocity Consortium
- Community Anti-Drug Coalitions of America
- ONDCP (Director Kerlikowske)

**August 6:**
- SAMSHA
- CASA at Columbia University
- World Health Organization
Tobacco Centers of Regulatory Science for Research Relevant to the Family Smoking Prevention and Tobacco Control Act
(P50) (RFA-DA-13-003)
Issued: July 10, 2012; Application Due Date: November 14, 2012;
Start Date: September 2013

Tobacco Control Regulatory Research
(R21) (PAR-12-266); (R01) (PAR-12-267);
(R03) (PAR-12-268)
Issued: August 23, 2012; Open Date: October 1, 2012;
Application Due Date(s): November 1, 2012; January 16, 2013;
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Recent NIDA Activities & Events
Priority Areas

**Prevention Research**

(Children & Adolescents)
genetics/epigenetics
development
environment
co-morbidity

**Treatment Interventions**

(New Targets & New Strategies)

**HIV and Drugs**

Prevention
Treatment
Purpose: Develop recommendations for prevention research for next 5 years to accelerate discovery and foster the greatest impact on public health.

(a) basic science on human behavior change (Type 1 translation)
(b) implementation science (Type 2 translation)

1. Unexplored or emerging areas for prevention science
2. Research questions pursuant to healthcare reform
3. Analytic and BIG DATA strategies to maximize impact?
4. Training of the next generation of prevention scientists?
Themes

- Transdisciplinary and team science
- Development of research methodologies
- Training (BIG DATA mining)
- New technologies (web based, social media)
- Learn from the HIV prevention field
Persistent Cannabis Users Show Neuropsychological Decline from Childhood to Midlife

Dunedin prospective study of 1037 Ss born 1972/73,

Tested for IQ at age 13 and 38y.

Tested THC use ages 18, 21, 26, 32 and 38y

Early (<18y) Long-Term Cannabis Use Decreases Axonal Fibre Connectivity

Axonal paths with reduced connectivity (measured with diffusion-weighted MRI) in cannabis users (n=59) than in controls (N=33).  
Zalesky et al Brain 2012.
New FOAs

**Research Education Grants for Statistical and Computational Training in the Genetics of Addiction (R25) (PAR-12-199)**
Issued: June 8, 2012; Due Date: September 14, 2012

**Behavioral Science Track Award for Rapid Transition (B/START) (R03) (PAR-12-251)**
Issued: July 26, 2012; Open Date: September 16, 2012

**Translational Research on Interventions for Adolescents in the Legal System: TRIALS (U01) (RFA-DA-13-009)**
Issued: July 13, 2012; Due Date: November 28, 2012
Priority Areas

Prevention Research
(Children & Adolescents)
genetics/epigenetics
development
environment
co-morbidity

Treatment Interventions
(New Targets & New Strategies)

HIV and Drugs
Prevention
Treatment
Council’s Report on:
Adoption of NIDA’s Evidence-Based Treatments in Real World Settings

1. Create a new entity at NIDA for Translation and Implementation Science

2. Establish NIDA guidelines for funding consideration (take into account potential for implementation, scalability and sustainability in relevant settings)

3. Evaluate intervention’s effectiveness, adoption and sustainability

4. Expand funding to implementation science

5. Establish a NIDA review panel instead of sending implementation grants for review at CSR
Develop a combination anti heroin/HIV vaccine

• Builds on preclinical data indicating that hapten-based anti-drug vaccines show promise against various drugs, including heroin.
• The heroin component has been created and is ready for optimization and advanced preclinical testing.
• Award will support this next phase of research and development.
Grand Opportunity in Medications Development for Substance-Related Disorders (U01) (PAR-11-109)

- Accelerate development of medication for SUD
- High impact and fast results to advance FDA approval
- U01: short-term (up to 3 years) and large (up to $5M q/y)
- Enable critical medications development studies not feasible with R01

- Deepak Cyril D’Souza
  Yale School of Medicine
  FAAH-Inhibitor for Cannabis Dependence

- Ronald G. Crystal
  Weill-Cornell Medical College
  Disrupted Adenovirus Serotype 5-based Anti-Cocaine Vaccine
A Double-Blind RCT of N-Acetylcysteine in Cannabis-Dependent Adolescents

Proportion of Negative Urine Cannabinoid Tests Over Time Among Cannabis-Dependent Adolescents

What’s Next for N-acetylcysteine?

- CTN starting study in 300 adult cannabis users at 6 sites
- Explore NAC at different doses and longer treatment duration?
- Test NAC with and without CM or other psychosocial interventions?

Combination of MAS-ER and topiramate was superior to placebo in achieving 3 w abstinence in cocaine-dependent individuals

Mariani et al., Biol Psychiatry 2012
FDA NEWS RELEASE
For Immediate Release:
July 17, 2012  FDA approves weight-management drug Qsymia

Qsymia is indicated as an adjunct to a reduced-calorie diet and increased physical activity for chronic weight management in obese adults.
• ORWH chose 10 applications for funding; 3 from NIDA

Kathleen Brady, MUSC
ORWH: SCOR on Sex and Gender Factors Affecting Women's Health
Targets three neuropeptides (oxytocin, orexin, CRF) as potential medication for addiction

Marilyn Carroll, Minnesota
Sex Differences and Progesterone Effects on Impulsivity, Smoking & Abuse
Targets progesterone for smoking cessation;

Sherry McKee, Yale
Gender-Sensitive Treatment for Tobacco Dependence
Targets the noradrenergic system for smoking cessation (guanfacine trial).
New FOAs -- Treatment

Development of Minimally-Invasive Bioassays to Support Outpatient Clinical Trials of Therapeutics for Substance Use Disorders (R01) (PAR-12-239), (R21) (PAR-12-238)
Issued: July 16, 2012; Due date September 16, 2012
Priority Areas

Prevention Research
(Children & Adolescents)
genetics/epigenetics
development
environment
co-morbidity

Treatment Interventions
(New Targets & New Strategies)

HIV and Drugs
Prevention
Treatment
Major Challenges

SEEK, TEST TREAT & RETAIN

1. Treating Substance Abusers with ART

2. Treating HIV+ Patients for Substance Abuse

RETAIN requires treatment of SUD
What is *NIDA* doing?

1. **NEW THERAPEUTICS for IDU**
   - Long lasting medications to improve compliance
   - Medications not based on opioid substitution
   - Vaccines and other immunotherapies

2. **STTR IMPLEMENTATION**
   - Substance abuse treatment programs
   - Health Care (ie STD clinics)
   - Criminal Justice System

*Countries where IDU is driver of HIV epidemic*
2012 Avant-Garde Awards for HIV/AIDS Research

David Smith, M.D.
*University of California, San Diego School of Medicine*
Project: Molecular epidemiology for HIV prevention for drug users and other risk groups

Samuel Friedman, Ph.D.
*National Development and Research Institutes, New York City*
Project: Preventing HIV transmission by recently-infected drug users

Jeremy Luban, M.D.
*University of Massachusetts Medical School, Worcester*
Project: Human genes that influence HIV-1 replication, pathogenesis, and immunity in intravenous drug users
**New HIV/AIDS FOAs**

**Cohort Studies of HIV/AIDS and Substance Use (U01) (PAR-12-222)**
Issued: June 29, 2012; Due Date(s): December 11, 2012; April 9, 2012; December 11, 2013; April 9, 2014; December 11, 2014; and April 9, 2015

**Advancing Exceptional Research on HIV/AIDS (R01) (RFA-DA-13-008)**
Issued: June 14, 2012; Due Date: December 17, 2012

**The Interplay of Substance Abuse and HIV-1 Infection on Glial Cell Function (R01) (RFA-DA-13-010); (R21) (RFA-DA-13-011)**
Issued: August 24, 2012; Due Date: November 19, 2012
In July, 2012, President Obama named recipients of the 2011 Presidential Early Career Award for Scientists & Engineers (PECASE)

NIDA Grantee, **Dr. Krista M. Lisdahl**, (University of Wisconsin - Milwaukee) was one of 20 NIH recipients of the 2012 PECASE awards for her studies on the effects of physical activity & marijuana use on frontolimbic function in teens
John Edward Solder
Westport, CT
“Optogenetic Interrogation of Prefrontal Cortex Dopamine D1 Receptor-Containing Neurons as a Technique to Restore Timing: A Novel Approach to Treat Prefrontal Disorders”

Benjamin Jake Kornick
Roslyn Heights, NY
“OMG: Look Who Joined Facebook! The Relationship Between Parenting and Adolescent Risk Behaviors”

L. Elisabeth Burton
Rio Rancho, NM
The symposia are:

• Ghrelin, Leptin, & Insulin Modulates Reward

• Role of Phagocytes in Synaptic Plasticity & Remodeling of Tissues in the Nervous System

• Brain Energetics & Neurotransmission: Fueling Neurons & Glia

• Central Nervous System Immune Signaling and Addiction
Other Tentatively Scheduled NIDA-Sponsored Activities at SfN

• **Toni S. Shippenberg Memorial Symposium**  
  Friday, October 12, 2012, 6:00 p.m. – 7:30 p.m.

• **Julius Axelrod Lecture and Poster Session**  
  Sunday, October 14, 2012, 6:30 p.m. – 9:30 p.m.

• **NIDA/INSERM Workshop on US-France Collaboration on Drug Abuse and Addiction Research**  
  Monday, October 15, 2012, 6:30 p.m. – 9:00 p.m.

• **NIH Grant Workshop for Early Career Investigators**  
  Tuesday, October 16, 2012, 6:30 p.m. – 9:00 p.m.
Second Annual National Drug Facts Week
Week of January 28th, 2013
Comparing Treatments for HIV-Positive Opioid Users in an Integrated Care Effectiveness Study (CHOICES)

CTN Protocol ID: CTN-0055
Enrollment Status: Pending
PI: Todd Korthuis, M.D., M.P.H., Oregon Health & Science University

- HIV-infected patients receiving office-based treatment are more likely to achieve viral suppression.

- IDU are least likely to engage in HIV care and achieve viral suppression.

- Substance abuse treatment can increase engagement in HIV care.

- This study will compare extended-release naltrexone to treatment as usual for opioid dependence in HIV-infected patients.
Post-Cessation IQ in Former Cannabis Users

Dunedin prospective study of 1037 individuals born 1972/73, Tested for IQ at age 13 and 38y. Tested THC use ages 18, 21, 26, 32 and 38y

Adolescent-Onset
(Used Cannabis Weekly Before Age 18)

Infrequent Cannabis Use at Age 38 (n=17)
Frequent Cannabis Use at Age 38 (n=19)

Adult-Onset
(Did Not Use Cannabis Weekly Before Age 18)

Infrequent Cannabis Use at Age 38 (n=13)
Frequent Cannabis Use at Age 38 (n=20)

Source: Meier MH et al., PNAS 2012.
Objective:
Areas of science that need development or strengthening
Opportunities for collaboration with NIAAA, other Agencies

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<tr>
<th>TOPIC</th>
<th>MODERATOR(S)</th>
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<tbody>
<tr>
<td>1. HIV (STTR) Implementation Implementation Science</td>
<td>Jacques Normand</td>
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<tr>
<td>2. Genetics</td>
<td>Betty Tai/Redonna Chandler</td>
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<td>Metabolomics/Epigenomics Biomarkers</td>
<td>Joni Rutter</td>
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<td>3. Medications Development/Clinical Trials IRP Partnership</td>
<td>John Satterlee</td>
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<td>4. Epidemiology/Comorbidity</td>
<td>Phil Skolnick</td>
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<td>5. Brain Development BIG DATA</td>
<td>Anto Bonci</td>
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<td>6. E/M Health and New Wireless Technologies</td>
<td>Wilson Compton/Lisa Onken</td>
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<td>Jim Bjork</td>
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<td>Kevin Conway</td>
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<td>Joe Frascella/Dave Thomas</td>
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New Common Fund FOAs

NIH Director’s Transformative Research Awards (R01) (RFA-RM-12-017)
Issued: June 13, 2012; Due Date: September 21, 2012

NIH Director’s Early Independence Awards (DP5) (RFA-RM-12-018)
Issued: June 13, 2012; Due Date: January 30, 2013

Human Heredity and Health in Africa (H3Africa):

*Ethical, Legal, and Societal Issues (ELSI) Research Program (U01) (RFA-RM-12-005)*
Issued: June 13, 2012; Due Date: October 29, 2012

*Collaborative Centers (U54) (RFA-RM-12-006)*
Issued: August 22, 2012; Application Due Date: October 29, 2012

*H3Africa Research Grants (U01) (RFA-RM-12-007)*
Issued: August 22, 2012; Due Date: October 29, 2012

*H3Africa Biorepository Grants (UH2/UH3) (RFA-RM-12-008)*
Issued: August 22, 2012; Due Date: October 29, 2012
5HT2c receptors are localized in relevant brain regions

From Bubar & Cunningham, 2008