

## TTURC Partners SRNT 2004 Preconference A Success!

By Kim Kobus

The TTURC preconference, *The Transdisciplinary Tobacco Use Research Centers: Process, Progress, and Research Results*, held at the Society for Research on Nicotine and Tobacco 2004 Annual Meeting, was a success. Over 200 attendees (many from Northern climes) resisted the temptation of a beautiful 80° February day in Scottsdale, Arizona to attend the day-long event.

### The Introduction

The day began with presentations by Glen Morgan, Ph.D., NCI, and Dave Abrams, Ph.D., Brown University, on the history of the TTURC initiative and the “premise, process and promise” of a transdisciplinary approach to tobacco use research. Researchers from the seven centers presented findings from the TTURCs across two overarching themes: “Lifespan risk and adolescence as a critical period for tobacco use vulnerability,” and “Treatment advances and mechanisms.” Robin Mermelstein, Ph.D., Director of the Partners National Program Office, moderated the meeting and challenged the audience to consider a “big picture,” transdisciplinary conceptual framework as they listened to presentations.

### The Morning Session

The morning session addressed vulnerabilities for tobacco use across the lifespan, especially during adolescence. Stephen Buka, Sc.D., Harvard, presented findings revealing that the offspring of mothers who smoke during pregnancy have an increased risk of tobacco dependence later in life. Frances Leslie, Ph.D., and Larry Jamner, Ph.D., researchers from UCI, presented their findings from research with adolescent rodents and humans, which suggest a vulnerability to nicotine/tobacco during adolescence. Janet Audrain-McGovern, Ph.D., U. Pennsylvania, suggested in her presentation that genetic differences might account for some of the variability in adolescent susceptibility to smoking and progression. Jennifer Unger’s, Ph.D., USC, presentation suggested the importance of globalization and “McDonaldization” (a corporation-driven global consumer



**TTURC PIs - l to r: Andy Johnson, Ph.D., USC; David Abrams, Ph.D., Brown U.; Frances Leslie, Ph.D., UCI; Stephanie O'Malley, Ph.D., Yale U.; Michael Fiore, M.D., U Wisconsin; Dorothy Hatsukami, Ph.D., U Minnesota; Caryn Lerman, Ph.D, U Pennsylvania.**

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## Multiple Factors Set Stage for Adolescent Smoking

By Louri Groves



Larry Jamner, Ph.D.

It appears that teenagers may be particularly vulnerable to the effects of nicotine. At the TTURC Preconference Meeting, UCI TTURC investigators Frances Leslie, Ph.D., and Larry Jamner, Ph.D., presented findings confirming this.

### Social Science Perspective

“Impulsivity, hostility, and negative moods are associated with elevated rates of tobacco use, but little is known about how these traits influence smoking initiation during the adolescent and young adult periods,” said Jamner, UCI professor of psychology and social behavior. He shared data from a four-year study that examined the social, psychological, and environmental factors influencing smoking initiation.



Frances Leslie, Ph.D.

Using palmtop computers to monitor daily moods of adolescents, Jamner and his colleagues found that negative

moods are more common among adolescents than adults, and that anger, sadness, and stress may serve as immediate triggers to smoking. Jamner and his team also studied how teens interacting with family and peer contexts, situational influences, nicotine reactivity, and genetic makeup enhanced or impeded the progression toward regular smoking.

### Biological Perspective

From a basic scientist’s perspective, Leslie, UCI TTURC director and professor of pharmacology, has confirmed that unique biological factors during adolescence may increase an adolescent’s sensitivity to the addictive effects of tobacco. Leslie and her colleagues used two behavior models of nicotine reinforcement in rodents, conditioned place preference and self-administration, and found an increased reward value of nicotine in early adolescence. They monitored behavioral

responses and found that nicotine reinforcement differed in adult and late adolescent rats. In contrast to later ages, there was a significant preference following one brief exposure to nicotine during early adolescence.

“Adolescents are more likely than adults to experience pleasurable effects of smoking,” said Leslie. “Moreover, their brain structure and function are also likely to be substantially changed by exposure to nicotine.”

Studies have shown that teens develop symptoms of dependence after minimal tobacco exposure. Furthermore, those who smoke daily as teens are more likely to experience difficulty quitting than those who start as adults. Both Jamner’s and Leslie’s findings along with other studies provide a strong argument that access to tobacco products should be restricted during adolescence.

## The Global Teen: Cultural Factors Affecting Smoking

By Jeff Baskin



Jennifer Unger, Ph.D.

Today’s teens, whether Latino girls in Los Angeles or Chinese boys in Shanghai, wear Levis, listen to hip-hop, and are inundated with advertising for everything from iPods to McDonald’s. They are global teens, members of a borderless culture that is heavily oriented toward consumer goods while remaining part of the more traditional cultures of their families and societies.

Speaking at the TTURC Preconference meeting in

Scottsdale, Arizona, USC researcher Jennifer Unger, Ph.D., pointed to the relatively new and growing phenomenon of the global teen, and asked: “Is globalization a risk factor for adolescent smoking? If so, can we counter it by associating globalization with non-smoking?”

“A consumer-oriented global culture that glamorizes smoking poses special risks to adolescents because they are busy exploring a variety of possible identities for themselves,” Unger said.

“Adolescence is a time for experimentation, and a rugged Marlboro-smoker might be one of the identities they’d like to try out, despite any pressures not to smoke that may emanate from their families’ cultural background.”

### Defining Adolescence

The period of identity experimentation has grown longer as the definition of adolescence itself has grown more malleable. “Identity experimentation now continues into adulthood,” she said, “and in the U.S., **continued on page 3**”

## Smoking During Pregnancy Elevates Risk for Nicotine Dependence

By Suzanne Moriarty



**Stephen Buka, Sc.D.**

According to recent TTURC: NEFS findings, published in the *American Journal of Psychiatry*, a mother who smokes a pack or more per day while pregnant places her offspring at risk for nicotine dependence. In the study led by Stephen Buka, ScD, Principal Investigator of the Prenatal, Child and Familial Risks for Nicotine Dependence Project, these offspring had twice the risk of becoming nicotine dependent in adulthood than the offspring of mothers who didn't smoke during pregnancy.

"Over half the women in the United States who smoke continue to do so while pregnant, with over half a million children born each year having been exposed to nicotine in utero," explained Buka.

"Finding safe, effective ways to help pregnant women quit smoking will improve the health of these mothers and a whole new generation."

### **NCCP Study**

Buka led the research team that examined data from two follow-up studies of the Providence cohort of the National Collaborative Perinatal Project (NCCP). NCCP (1957-1965) collected information from over 50,000 pregnant women and their offspring nationwide, regarding the children's health and environmental factors from birth through age seven.

The follow-up interviews with offspring were completed at an average age of 29. In this analysis of 1,248 interviews, Buka's team examined the data to determine how maternal smoking during

pregnancy influenced offspring's smoking patterns. Although rates of "ever smoking" (ever smoked a cigarette) and "regular smoking" (smoking daily for 30 days or more) were about the same for both the in utero exposed offspring and the non-exposed offspring, the risk of progressing to nicotine dependence for "ever smokers" and "regular smokers" doubled for those who had been exposed to one pack or more of nicotine in utero

"We are one step closer to understanding how nicotine dependence is passed on within families," summarized Buka. "These results indicate that moderate to heavy smoking during pregnancy places the offspring at elevated lifetime risk for full-blown nicotine dependence and difficulties quitting."

## Global Teen Continued . . .

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some researchers have conjectured that 'adolescence' now stretches well into a person's mid- to late-20s.

### **Risk Factors**

If identity exploration continues into early adulthood, additional risk factors arise: young adults can buy cigarettes legally, are more independent, and have more spending money; and as adults, they are exposed to tobacco advertising targeted at their age group, advertising that is barred from younger audiences' media.

Unger added that "much more

research is needed on the impact of the global culture on adolescent health behaviors, along with research on the best strategies for forming associations between the global culture and non-smoking."

### **Project Flavor**

Unger delivered her comments on globalization while presenting a study that compared the effectiveness of culturally tailored smoking prevention curricula with culturally neutral curricula in Los Angeles-area middle schools. The study found that in pre-

dominantly Hispanic schools, the culturally tailored curriculum was most effective in preventing students from smoking while in predominantly Asian and other multicultural schools, a standard social influences-based curriculum worked best. The study was published in the February 2004 issue of *American Journal of Public Health* under the title "Project FLAVOR: One-Year Outcomes of a Multicultural, School-Based Smoking Prevention Curriculum for Adolescents."

## Modeling the Effect of Alcohol on Tobacco Relapse

By Pem McNerney



**Sherry McKee, Ph.D.**

Alcohol is a well-known risk factor for smokers who have quit. One drink can lead to picking up a cigarette. Up to 95 percent of abstinent smokers who have that first cigarette end up smoking at the same rate they did before their quit attempt.

Finding ways to help those smokers is a goal for TTURC researcher Sherry McKee, Ph.D., an assistant professor in the Yale Department of Psychiatry. McKee has developed a human laboratory model to help examine how alcohol reduces the ability to resist that first cigarette and to study how drinking facilitates a return to smoking. At

SRNT 2004, McKee presented these findings as part of the Young Investigators' Symposium. Her paper, "Modeling the Effect of Alcohol on Tobacco Relapse," was one of four selected from hundreds of papers to be featured.

### Resisting Smoking

"Alcohol and tobacco are two behaviors that occur together," McKee said. "Current human laboratory models have not focused on the ability to resist smoking, which is a critical feature of abstinence success. Since the first incidence of smoking represents an important transition, we wanted that to be the focus of the model."

Preliminary results from a TTURC pilot project directed by McKee showed that participants who consumed alcohol were less able to resist smoking and they smoked more cigarettes, compared to those who received a placebo drink. "The results from this human laboratory model mirror those seen in clinical literature," said McKee.

The current model looks at how alcohol facilitates a relapse. Future work will incorporate other known precipitants of relapse, such as negative affect and nicotine deprivation, McKee said. Ultimately, the model will be used to screen different medications

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## ADHD Symptoms Predict Relapse in NRT Treatment

By Megan Kasimatis



**Margaret Rukstalis, M.D.**

At SRNT 2004, Margaret Rukstalis, M.D., U. Pennsylvania, reported that increases in attention deficit hyperactivity disorder (ADHD) symptoms during the first week of nicotine replacement therapy (NRT) may increase the possibility of relapse

### ADHD and Withdrawal Symptoms

Previous studies have shown that individuals with a history of ADHD are more likely to smoke and experience nicotine withdrawal symptoms, including irritability and difficulty concentrating. With this in mind, Rukstalis and her colleagues sought to determine whether changes in inattention, and

hyperactive/impulsive symptoms following a quit attempt predicted relapse among smokers using NRT.

In the study, 454 treatment-seeking smokers were randomized to receive nicotine nasal spray or the nicotine patch for 8 weeks in combination with 7 weeks of group behavioral counseling. During the first week of abstinence 37% of smokers reported an increase in ADHD symptoms. These changes were similar for smokers treated with the nicotine patch and the nicotine nasal spray. Smokers who reported an increase in ADHD symptoms had significantly lower rates of abstinence at the end of treatment. Only 29% of smokers whose ADHD symptoms increased

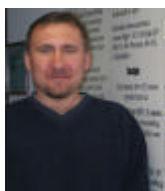
during the first week were abstinent at the end of treatment versus 41% of smokers whose ADHD symptoms did not increase in the first week following their quit date.

This research suggests that ADHD symptoms may be an early indicator for relapse. These findings also suggest that medications that target abstinence-induced ADHD symptoms may help people quit smoking.

"This is an exciting new area, since problems with inattention, hyperactive and/or impulsive symptoms can be assessed and treated. These data suggest new areas of research to explore how effective treatments for ADHD symptoms may help smokers quit," said Rukstalis.

## Stop Smoking Websites - Do They Work?

By Gloria Meyer



Mark Zehner,  
B.S.

If conversation is an indicator of interest, smoking cessation websites were attracting a great deal of attention at the 2004 SRNT Annual Meeting. As well they should.

Currently, over 200 smoking-related websites exist. Many are unrelated to evidence-based treatment and offer only individual stories of “beating tobacco addiction.” More important, at least eight states are adding the services of Quitnet, the best known quit smoking website, to their menu of smoking cessation products. So far none of the quit smoking sites appears to have been rigorously evaluated for efficacy or effectiveness in producing abstinence.

### UW and Computer-Assisted Treatment

Information from the University of Wisconsin TTURC research study on computer-assisted treatment is beginning to address some of the questions that need to be answered before a greater investment is made in this treatment modality. Two posters presented at the SRNT Annual Meeting by Mark Zehner, B.S., and others from the UW-TTURC provided preliminary results from a study using a computerized smoking cessation program, developed collaboratively with the UW Center for Health Systems Research and Analysis (CHSRA). The program, “Quitting Smoking for Life” (QSFL) provides internet-based support and information and interactive, tailored feedback to smokers trying to quit.

### QSFL and Cessation Elements

The first poster<sup>1</sup> compared smokers’ ease of obtaining elements of cessation treatment through the QSFL program vs. a standard treatment intervention during a quit attempt. Participants were randomized into two groups: Group 1: brief counseling and Zyban, and Group 2: brief counseling, Zyban and the quit smoking computer program. At the end of treatment (12 weeks), 96 participants answered a survey designed to measure their ease in obtaining elements of recommended treatment. The responses indicated that smokers who used the QSFL program frequently were more likely to report a high level of “ease in obtaining information on quitting smoking” compared to smokers using the program less than the control group. A similar pattern emerged regarding participant ratings of the “ease of getting help with withdrawal or negative emotions,” with the heaviest users of QSFL most often reporting easier access to help. Interestingly, there were no differences between the QSFL users and the control group in “ease of getting support from others.”

### QSFL and Smoking Cessation Success

The second poster<sup>2</sup> examined success in quitting. These results showed that overall, those assigned to the QSFL program were no more successful than other subjects. However, frequent users of the QSFL program had greater success in achieving abstinence compared to lower use smokers and the control

group. This difference was observed at 2 weeks and 12 weeks post-quit with only the 12-week mark being statistically significant.

“This preliminary pass through the data raises, perhaps, more questions than it answers,” said Zehner. Why do some smokers use computer-assisted programs more than others? Which parts of the program were most visited by high and low users? Which parts work best? And so on. As the data are analyzed, more answers are likely to emerge as are more questions. “The questions are important because computer-assisted cessation interventions should be analyzed and challenged like any other new treatment,” said Zehner. “That’s the only way we’ll know for sure if these sorts of technological interventions should be promoted to the broad general population of smokers.”

### Zehner Posters at SRNT

<sup>1</sup>Zehner, ME, Smith, SS, Baker, TB, Fiore, MC, Gustafson, DH. *Participant Perceptions of Ease of Obtaining Cessation Treatment Help During a Quit Attempt.*

<sup>2</sup>Zehner, ME, Pophali, DS, Smith, SS, Baker, TB, Fiore, MC, Gustafson, DH. *Use Patterns of Internet-based Systems for Smoking Cessation and Smoking Outcome.*

## Preconference Continued...

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culture) as factors of youth tobacco use.

### The Afternoon Session

The afternoon session addressed findings on tobacco use treatments and mechanisms of use. Mark LeSage, Ph.D., U. Minnesota, reported results from animal research, which suggested the potential therapeutic benefit of using higher than typical dosages of nicotine replacement therapies (NRT). Other research on NRT, presented by Caryn Lerman, Ph.D., U Pennsylvania, indicated that a specific genetic variant (OPRM1 Asp40) may alter the effectiveness of specific types of NRT (i.e., transdermal nicotine vs. nicotine nasal spray). Research examining the combination of naltrexone with NRT, presented by Stephanie O'Malley, Ph.D., Yale, indicated dose dependent benefits for woman trying to quit smoking and individuals who are heavy drinkers. Tim Baker, Ph.D., U. Wisconsin, presented data which suggested that the suppression of urges to smoke is important as a mediator of withdrawal. Dorothy Hatsukami, Ph.D., U. Minnesota, presented findings indicating that the toxicity of reduced exposure nicotine products, such as modified cigarette products (Omni), oral non-combustible tobacco products (Snus), and low-yield cigarettes, are comparable to those of medicinal nicotine products or non-reduced exposure products.

This newsletter further highlights the TTURC research presented at SRNT 2004.

## Relapse Continued. . .

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that show promising results in basic science studies. If the findings from the human lab model reinforce those results, the medication could be considered for a full-scale clinical trial. "It is our hope that these models will be useful in screening promising pharmacotherapies for smoking cessation, thereby facilitating translational work by providing a bridge between basic and clinical studies," McKee said.

## TTURC Partners Preconference Snapshots



Tim Baker explaining smokers' urges during withdrawal.



Mark LeSage presenting his data.



Glen Morgan explaining the history of the TTURC initiative.



Robin Mermelstein introducing Jennifer Unger.



Attendees asking questions.

**The Networker**

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