



NATIONAL CENTER FOR
RESPONSIBLE GAMING

1998

ANNUAL REPORT

OUR MISSION

The mission of the National Center for Responsible Gaming is to help individuals and families affected by gambling disorders and eliminate underage gambling through the following activities:

- Supporting the finest peer-reviewed basic and applied research on disordered gambling behavior.
- Encouraging the application of new research findings to improve prevention, intervention and treatment strategies.
- Enhancing public awareness of disordered and underage gambling.

A MESSAGE FROM THE CHAIRMAN

FROM THE DESK OF MAJ. GEN. PAUL A. HARVEY (RET.)

1998 was an especially gratifying year for the National Center for Responsible Gaming (NCRG). The 10 grants awarded by the NCRG in late 1997 funded investigations of gambling disorders and youth gambling, which commenced in the spring of this year. We announced a call for applications in the summer of 1998, a process that was completed in February 1999 with the award of more than \$1.06 million in grants, bringing the NCRG's total research funding to \$2.5 million.

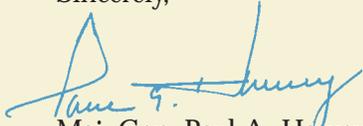
In 1998, we laid the groundwork for our first conference, "New Directions in Gambling Addiction Research," on Feb. 5 of this year. More than 150 people attended the conference at The George Washington University, including academic researchers, clinicians, and representatives from government and the gaming industry. By all accounts, the conference marked a turning point in gambling studies. The NCRG demonstrated that financial support and rigorous standards are the ingredients for creating a thriving and respected field of research.

The NCRG's voice was heard many times during the 1998 deliberations of the National Gambling Impact Study Commission. Excerpts from testimony given to this congressionally mandated federal panel by an NCRG board member and executive director are included in this report.

The National Center for Responsible Gaming has made extraordinary progress in three years. We have established a unique and credible organization dedicated exclusively to promoting peer-reviewed research on disordered and underage gambling. For this, we are grateful to our generous donors and to those who have supported our mission.

We look forward to building on the progress achieved in 1998 toward creating a rigorous field of scientific research on disordered gambling.

Sincerely,



Maj. Gen. Paul A. Harvey (Ret.)

Chairman

Gaming Entertainment Research and Education Foundation



Retired Maj. Gen. Paul A. Harvey, chairman of the Gaming Entertainment Research and Education Foundation. Harvey is the former executive director of the Mississippi Gaming Commission.

SCIENCE AND THE PUBLIC

Building Bridges

The mission of the National Center for Responsible Gaming (NCRG) reaches beyond funding research. Disseminating and translating the findings of this research is also a top priority.

Seminars: “Understanding Gambling and Its Potential Health Consequences”

In 1998, the NCRG sponsored two seminars on the topic “Understanding Gambling and Its Potential Health Consequences,” conducted by Howard Shaffer, director of Harvard Medical School’s Division on Addictions.

The first seminar, held Feb. 26 at the Golden Nugget in Las Vegas, attracted a diverse audience of 130 individuals from the gaming industry, academia and social services sector. Co-sponsored by the American Gaming Association (AGA) and the Nevada Council on Problem Gambling, with generous support from Mirage Resorts, Inc., the seminar featured a three-hour presentation by Shaffer on the results of the study

he co-authored, *Estimating the Prevalence of Disordered Gambling Behavior in the United States and Canada: A Meta-analysis*. This groundbreaking study, funded by a \$140,000 grant from the NCRG, was the first comprehensive study of disordered gambling prevalence rates in the United States and Canada. The NCRG has distributed more than 3,000 copies of the study to researchers, policy-makers, treatment providers and others interested in gambling studies.



Workshop participants at conference.

Shaffer conducted a second seminar at the Southern Gaming Summit in Biloxi, Miss., on May 6, 1998. Co-sponsored by the Mississippi Council on Problem and Compulsive Gambling, the seminar was attended by more than 100 individuals

from the gaming industry and the local community. Seminar participants included educators, social service professionals, human resources staff, communications and public

They have well-respected scientists in the crowd (NCRG/The George Washington University-sponsored conference “New Directions in Gambling Addiction Research”), and as far as I can tell, everyone is interested in the question [of gambling addiction] in an open-ended way.

*Alan I. Leshner, Ph.D.
Director, National Institute on Drug Abuse*

The Chronicle of Higher Education

March 5, 1999

relations representatives, corporate responsible gaming staff, table operations personnel, executives, treatment professionals, and problem gambling counselors.

Conference: “New Directions in Gambling Addiction Research”

Academic researchers and clinicians were joined by journalists, students, gaming industry representatives and staff from the National Institutes of Health (NIH) and National Research Council (NRC) for the first NCRG conference, “New Directions in Gambling Addiction Research.” This one-day event at The George Washington University attracted more than 150 people for a discussion of new trends in research.

Alan I. Leshner, Ph.D., director of the National Institute on Drug Abuse at NIH, delivered the keynote address, “Addiction is a Brain Disease—and It Matters.” Scientists currently funded by the NCRG also reported on their preliminary findings in the areas of neuroscience, behavioral-social science and epidemiology. The afternoon workshops focused on special



Left to right: Richard Evans, Ph.D. (University of Houston, NCRG advisory board), James Breiling, Ph.D. (National Institutes of Health), Robert Ladouceur, Ph.D. (Université Laval, NCRG-funded investigator).

topics such as youth gambling, prevention and definitions of pathological gambling.

Nigel Turner, a scientist with the Centre for Addiction and Mental Health, described the conference as “a very stimulating environment for theoretical discussion” and noted that it inspired him and other NCRG-supported investigators to plan collaborative work “so that we can attempt to integrate the neuro, genetic, cognitive, and clinical aspects of problem gambling into a unified view of the disorder.” The NCRG plans to join with universities and other respected research organizations to host similar conferences in the future.



Alan I. Leshner, Ph.D., director of the National Institute on Drug Abuse, delivered the keynote address, “Addiction is a Brain Disease—and It Matters,” at the NCRG conference.

NCRG-FUNDED RESEARCH

A New Era Begins

In late 1997, the NCRG awarded 10 grants totaling \$1,287,427. These investigations of disordered gambling behavior, which began in the spring of 1998, were selected from a highly competitive pool of 64 grant applications by peer review panels and the NCRG's advisory board. The NCRG follows the rigorous criteria and review procedures of the National Institutes of Health. A list and brief explanation of the grant awards follows:

- **City of Hope National Medical Center**

Duarte, Calif.

"The Molecular Genetics of Pathological Gambling," \$159,990

The investigators are testing the hypothesis that some individuals are susceptible to a range of addictive behaviors, impulse control disorders and risk-taking behaviors, including pathological gambling, due to a genetic abnormality that results in a malfunctioning of the pathways controlling dopamine levels. They are examining DNA samples from pathological gamblers and a control group.
Completion date: September 1999

- **Foundation for Clinical Neuroscience Research**

Cleveland

"Relation of Cognitive Status to Brain Blood Flow and Dopamine Receptors in Pathological Gamblers," \$138,000

Past studies have indicated that pathological gamblers may suffer from cognitive impairment that results in poor judgment and reduced attention span. The investigators are examining the relationships between regional brain activity and dopamine receptors through neuroimaging scans and DNA samples. This study has important implications for the type of therapy offered and may help explain the high rate of treatment relapse.

Completion date: February 2000

- **University of New Mexico**

Albuquerque, N.M.

"A Combined EEG, MEG, MRI, and SPECT Imaging Study of Pathological Gamblers," \$76,360

Disordered gambling behavior may be rooted in a defect in the brain's decision-making circuit that results in impulsivity and an abnormal response to reward and punishment. This project is using various brain imaging techniques to assess the brain activity of pathological gamblers while they perform a computerized version of the Gambling Task that simulates the behavioral state of gambling in a laboratory setting.

Completion date: June 1999

- **University of Minnesota Medical School**

Minneapolis

"Double-blind Study of Naltrexone and Placebo in the Treatment of Pathological Gambling Disorder," \$53,374

The drug naltrexone has been effective in treating psychiatric disorders characterized by excessive urges and loss of behavioral control, including alcoholism and bulimia nervosa. The investigators have hypothesized that naltrexone will reduce uncontrollable urges to gamble. This trial is testing the safety and efficacy of this medication for pathological gamblers.

Completion date: December 1999

- **Minnesota Institute of Public Health**

Anoka, Minn.

"Psychosocial and Behavioral Factors Associated with Problem Gambling by Youth," \$57,339

The investigator is conducting a statistical analysis of the Minnesota Student Survey database, the world's largest database of youth gambling information, in order to answer the following questions: What demographic, psychosocial, and behavioral variables are associated with underage gambling? Have rates of youth gambling increased, decreased, or stayed the same from 1992 to 1995 to 1998?

Completion date: January 2001

- **University of Minnesota**

Minneapolis

“*Youth Gambling: Transition from Adolescence to Young Adulthood*,” \$56,410

The investigator is testing the validity of a developmental model of youth gambling adapted from drug and alcohol research. One pivotal question is whether adolescents involved in gambling experience the “maturing-out” process young people involved in alcohol and drug use experience when they reach young adulthood. The findings will be helpful for improving prevention strategies.

Completion date: February 2000

- **Addiction Research Foundation**

Toronto

“*Cognitive Biases in Problem Gambling*,” \$33,748

This study seeks to characterize the nature of distorted thinking and erroneous reasoning in diagnosed pathological gamblers. For example, gambling behavior appears to be accompanied by beliefs about the ability to control luck and about the efficacy of superstitious behavior to influence gambling outcomes. The findings of this study will help clinicians determine the potential of cognitive approaches to treatment.

Completion date: April 1999

- **Université Laval**

Sainte-Foy, Quebec

“*Cognitive Treatment of Pathological Gambling*,” \$140,499

This clinical trial is treating pathological gamblers with cognitive therapy, which seeks to change behavior by modifying thoughts. The aim is to modify the disordered gambler’s erroneous notion of randomness. The findings of this study will help clinicians determine the potential of cognitive approaches to treatment.

Completion date: January 2001

- **University of Calgary**

Calgary, Alberta

“*Critical Dimensions of Relapse in Pathological Gambling*,” \$106,638

The study will follow problem gamblers in treatment for a year to understand the phenomenon of relapse, a subject that has received little attention from researchers. The findings of this study will have important implications for theory and treatment.

Completion date: June 2000

- **Harvard Medical School**

Boston

“*The Harvard Project on Gambling and Health*,” \$465,069

This project is a continuation of the groundbreaking research conducted for the first NCRG grant, *Estimating the Prevalence of Disordered Gambling Behavior in the United States and Canada: A Meta-analysis*. The Harvard database is enabling researchers, policy-makers, and the public to access the most reliable and precise estimates of the prevalence of gambling-related phenomena. The investigators have completed five technical reports, including a revision of the meta-analysis that has been accepted for publication by the prestigious *American Journal of Public Health*. The investigators have also worked with the Massachusetts Council on Compulsive Gambling to develop an automated helpline number system that will provide higher quality and more standardized data from callers. The NCRG grant also supports the project’s publication of *The WAGER* newsletter, a weekly fax about gambling research with a subscription base of nearly 1,000 people and an estimated readership of 7,500.

Completion date: January 2000

NCRG-FUNDED RESEARCH

Building for the Future

The NCRG's 1998 request for applications (RFA) called for research projects on disordered and underage gambling in both neuroscience and behavioral-social science. The RFA emphasized the NCRG's special interest in youth gambling and prevention research. From a pool of 79 letters of intent to apply, the advisory board selected 35 proposals for submission to the NCRG in January 1999. Peer review panels in neuroscience and behavioral-social science assessed the scientific merit of the proposals. On the basis of these evaluations, the advisory board awarded eight research grants for a total commitment of \$1,063,730, bringing the NCRG's total awards since 1996 to nearly \$2.5 million. A list and brief explanation of these grant awards follows:

- **University of South Alabama**

Mobile, Ala.

"Adolescent Gambling Behavior as a Function of Individual Differences in Risk-taking, Gender, Peer and Family Context, and Community Norms for Legalized Gambling," \$125,800

This study will focus on 16- to 19 year-old high school students from three communities. This age group is at high risk for gambling because of increased access to independent transportation and money. The investigators will develop a comprehensive model of adolescent gambling behavior by examining risk factors and how they relate to the adolescents' perceptions of their peers, family and community context.

Completion date: March 2001

- **Centre for Addiction and Mental Health**

Toronto

"Adolescent Understanding of the Emotional and Cognitive Aspects of Gambling: The Development of a Prevention Strategy," \$88,296

The researchers will develop and test a classroom intervention designed to prevent adolescent gambling in hopes that early intervention may eventually reduce development of a gambling disorder in at-risk adult populations. The researchers will compare a strategy designed to alter cognitive biases

associated with pathological gambling with a stress-inoculation approach designed to provide emotion-focused coping skills.

Completion date: April 2000

- **University of Missouri**

Columbia, Mo.

"The Association of Gambling Problems with Impulsivity as a College Student and the Genotype-phenotype Relation," \$171,124

The researchers will undertake a molecular genetic investigation of a personality trait called "impulsive nonconformity" that is strongly associated with sensation seeking, substance dependence, and other behaviors related to gambling disorders. Using DNA extracted from former college students who produced extremely high or low scores on the Impulsive Nonconformity Scale while they were students, they will type candidate genetic polymorphisms associated with gambling disorders and test for association of gambling problems both with personality traits and with the candidate genotypes.

Completion date: May 2001

- **Massachusetts General Hospital**

Charlestown, Mass.

"Functional MRI of Neural Responses to Monetary Gains, Losses and Prospects in Pathological Gamblers and Normal Subjects," \$172,500

The investigators will use functional magnetic-resonance imaging (fMRI) to localize patterns of brain activation in pathological gamblers and normal subjects with particular attention to known components of brain reward circuitry, during (1) the expectation and experience of monetary gains and losses, (2) the anticipation of impending victory or defeat in a game of chance on which a wager has been made, and (3) the build-up of craving to resume gambling during an enforced interruption. This study has significant implications for understanding the link between the neurobiological bases of substance abuse and pathological gambling.

Completion date: March 2001

- **University of Illinois-Chicago**

Chicago

“Reward Deficiency ERPs: Effects of D2A1, Gambling Pathology and ADHD,” \$172,492

The primary aim of this study is to investigate whether certain event-related brain potential (ERP) abnormalities in response to gambling feedback, which were observed among the gambling disordered in an earlier study, may reflect a reward deficiency syndrome whose severity is driven partly by presence of the dopamine D2 receptor gene, A1 variant (D2A1). The study will also introduce a task designed to foster “chasing” behavior, a hallmark of pathological gambling, and examine the effects of Attention Deficit Hyperactivity Disorder (ADHD), a condition associated with pathological gambling and D2A1, on gambling feedback ERP abnormalities.

Completion date: March 2001

- **Centre for Addiction and Mental Health**

Toronto

“Pharmacological Priming of Gambling-related Cognitions by Amphetamine,” \$75,042

This study will attempt to provide more than correlational evidence of the role of dopamine in disordered gambling. The researchers will use a naming task to assess the effects of amphetamine-induced dopaminergic activation on automatic addiction-related cognition in problem gamblers and alcoholics. This approach could form the basis of a number of related studies designed to elucidate the role of dopamine and other neurotransmitters in the neurobiology of addiction.

Completion date: October 2000

- **Washington University in St. Louis**

St. Louis

“The Development of a Diagnostic Gambling Assessment—the GAM-IV,” \$86,321

This study will develop the computer-based Gambling Assessment Module (GAM-IV) in a three-phase process. The GAM-IV will provide extensive diagnostic and other gambling information, including amount, frequency, type of gambling activity; onset, recency, and durations of symptoms; amount of money wagered; alcohol- and drug-associated gambling; illicit and underage gambling; help-seeking for gambling problems; family history; and information on social networks and various venues for gambling activity.

Completion date: June 2000

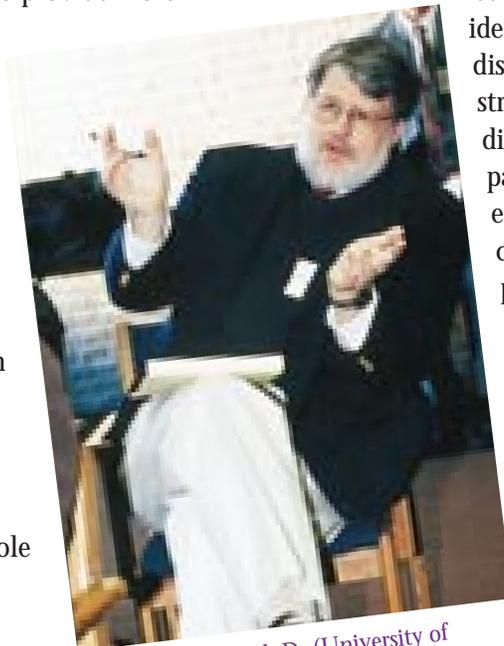
- **University of Illinois at Urbana-Champaign**
Champaign, Ill.

“Affective, Cognitive and Perceptual Processes in Gambling,” \$172,155

The focus of this study is *how* people gamble, not *why*. The investigator will attempt to discern differences between pathological and recreational gamblers in hopes of

identifying and describing several distinct types of gambling styles and strategies, including ones that will distinguish between subtypes of pathological gamblers. Four experiments will examine connections between erroneous perceptions of randomness and gambling behavior, effects of positive and negative moods on affective and cognitive processes while gambling, the accuracy of memories for wins and losses, and relation between gambling behavior and risk factors.

Completion date: March 2001



Charles Warren, Ph.D. (University of Illinois-Chicago) recently received an NCRG grant for neuroscience research.

NCRG OFFERS INSIGHTS

Testimony to the National Gambling Impact Study Commission

In 1996, the U.S. Congress created the National Gambling Impact Study Commission to conduct a comprehensive legal and factual study of the social and economic impact of gambling on governments, businesses, families and individuals in the United States. The nine members of the commission were appointed by the president, the speaker of the house and the Senate majority leader and are required to submit a final report on their findings to the president, Congress and state governors in June 1999.

The commission has met in various cities across the country and heard testimony from public officials, experts in the field of gaming and private citizens. Howard Shaffer, a member of the board of directors of the Gaming Entertainment Research and Education Foundation and director of the Harvard Medical School Division on Addictions, testified before the commission on Jan. 22, 1998, in Atlantic City, N.J. Christine Reilly, executive director of the NCRG, testified before the commission on Nov. 11, 1998, in Las Vegas and was invited to offer recommendations to the commission on Feb. 9, 1999, in Virginia Beach, Va.

The testimony of both Shaffer and Reilly provided the panel with up-to-date information and insights on disordered gambling. Shaffer shared the results of the NCRG-funded study, *Estimating the Prevalence of Disordered Gambling Behavior in the United States and Canada: A Meta-analysis*, the most comprehensive study to date on disordered gambling. He provided the commission with wide-ranging views on the subject honed from years of experience and an intimate knowledge of the subject matter. Following are excerpts from his testimony:

Recently, my colleagues and I completed a study which includes the most comprehensive analysis of the gambling prevalence research literature in the United States and Canada. This work revealed

considerable conceptual confusion and inconsistency about the terminology that scientists have used to describe intemperate gambling.... As a result, we adopted some different language to classify intemperate or disordered gambling.... [L]evel one prevalence rates...reflect people who do not have any gambling problems at all,

level two represents those individuals who failed to satisfy the multiple criteria for a clinical disorder, but do experience some of the adverse symptoms that can be associated with gambling, and level three reflects those people who meet sufficient criteria for having a disorder.

Our new research reveals that during the past 23 years, in spite of higher rates of disordered gambling among adolescents and substance abusing or psychiatric patients in treatment, only the adult segment of the general population has

shown an increasing rate of gambling disorders.

The rate increase we observed among adults from the general population could be due to many factors. For example, during the past two decades there's been an increased availability and accessibility to gambling. There's been an increased social acceptance of gambling. There are few messages about the potential risks and hazards of gambling. There's been an increasing desire to participate in risk-taking activities in general. And, perhaps, there's been a decline in the belief that one can achieve the American dream, a growing sense of emotional discomfort, a



Howard J. Shaffer, director of Harvard Medical School's Division on Addictions and co-author of *Estimating the Prevalence of Disordered Gambling Behavior in the United States and Canada: A Meta-analysis*.

malaise or dysthymia among the American people. All of these things could play a role in increasing the rate for disordered gambling among the general adult population.

Observers tend to think that disordered gambling is growing in direct proportion to the expansion of legalized gambling opportunities. This may not be an accurate perception. Assessing shifting social trends is very difficult without evidence from prospective research, and...we have no prospective research to date....

However, gambling certainly has expanded much more rapidly than the rate of disordered gambling. We do know that. Tobacco, arguably the most virile and objective chemical dependence, has been widely available, and despite this wide availability tobacco has a much smaller user base than 20 years ago. We must conclude that availability is not a sufficient, sole explanation for the increased rate of gambling as an addictive disorder in the United States.

In part, the history of gambling research inadvertently has fueled this very perception that expanded gaming, and by expanded I mean lottery, casino, charitable gaming, is the sole course of increased gambling problems. And, the reason for this is that early gambling prevalence studies tended to focus on the adult general population. This is the population segment with the lowest rate of gambling disorder. More recently...their research interests have become much more diversified and they've examined young people and other high-risk population segments. Consequently, the shifting evidence provided by more recent studies of new population segments with higher rates of the disorder have, perhaps, biased the prevailing subjective impressions of our disordered gambling prevalence rates.

At the risk of being misinterpreted and misrepresented, I'd like to note that many economists, researchers and social policymakers have made two important assumptions about disordered gambling that are often incorrect. It's incorrect that all gamblers who experience problems with gambling eventually progress to become level three or pathological gamblers. Secondly, it's incorrect to assume that once someone becomes a disordered gambler only professional treatment will arrest the problem.

*g*ambling researchers who have been
in the field for a while, have been
calling for some kind of effort to
fund research for many years. The
NCRG is the first effort that we've
seen, and I absolutely have to
applaud the casino industry for
coming up with that particular
method, it's a peer reviewed,
scientifically sound way of getting
research done....

*Rachel Volberg, Ph.D.
President, Gemini Research*

*Testimony before National Gambling Impact
Study Commission*

Jan. 22, 1998

NCRG OFFERS INSIGHTS

Testimony to the National Gambling Impact Study Commission

Just as most people who occasionally feel depressed do not progress to a state of clinical depression, most gamblers with level two gambling-related problems do not experience a progression to level three states.

Further, in addition to professional treatment, there are many different pathways out of disordered gambling. Gamblers Anonymous, perhaps, is best known, but natural recovery is certainly another pathway out of disordered gambling.

Current research has not identified reliable methods for determining which gamblers will develop gambling disorders, or who will recover with or without treatment.

Furthermore, without precise estimates of the duration of gambling disorders, and the extent of people who recover without any treatment at all, it's not possible to estimate accurately the economic and social impact of disordered gambling.

While the rate of disordered gambling among adults may continue to increase, such an increase is not without end. Just

as Americans have been reducing their use of tobacco and alcohol during the past two decades, in spite of the widespread availability of these products, the rates of gambling excess will also begin to diminish as people learn of the potential personal and social risks associated with gambling. This has happened on two previous occasions, it's likely to happen again.

I'd like to offer...five suggestions for your consideration. First, since gambling problems, particularly, among the young, are not dramatically different from alcohol and other drug-using problems, I believe that gambling proponents and opponents alike should join forces to develop and implement prevention, education and treatment initiatives for disordered gambling that are commensurate with these other problems.

Second, to engage in this bipartisan program initiative, it will be necessary to use the most rigorous scientific information, and provide improved education, training and clinical supervision to both gambling and other addiction treatment specialists.

Casinos in Nevada and around the country recognized long ago they were going to be asked to heighten awareness and contribute more to the treatment of addictive gamblers. It is why they created and formed the National Center for Responsible Gaming in Kansas City.

After a few short years, the center now is recognized as one of the country's leading authorities on problem gambling.

*Jeff German
Las Vegas Sun*

Nov. 15, 1998

Third, to advance this scientific knowledge, I encourage...this Commission to prioritize a prospective or incidence study of gambling disorders among high-risk population segments, for example, adolescent males. More than any single prevalence study, an incidence study will help us understand what specific factors encourage level one gamblers to become level two or three gamblers.

I believe that the federal and state government should advocate for the treatment of those suffering with disordered gambling by requiring the insurance industry...to allocate the resources necessary to support this important and legitimate health care service.

Finally, I respectfully encourage this Commission to press the federal government, through its National Institutes of Health, to develop a rigorous research and treatment improvement initiative, along with the funding stream necessary to advance the study of disordered gambling and its treatment.

Reilly's initial appearance before the National Gambling Impact Study Commission concentrated on providing information about the NCRG and its activities. She met again with the commission to provide recommendations to the panel. Excerpts from her presentation follow:

Our recommendations to this panel cover three main areas of concern to both the NCRG and the commission: Research Issues, Financial Resources, and Bridging Research and Practice. The following recommendations reflect the wisdom and experience of NCRG advisory board members, foundation members and the distinguished scientists conducting NCRG-funded projects.

Research Issues

Recognize the importance of understanding disordered gambling behavior as a multidimensional problem, comprised of biological, psychological, and sociological factors.

The NCRG believes that disordered gamblers deserve to benefit from the same scientific and technological advances that are helping people who suffer from depression, alcoholism and other disorders. The NCRG encourages the commission to resist the uninformed and out-dated notion that brain research has no contribution to make in understanding disordered gambling.

Recognize the benefits of the meta-analytic approach to gauging national prevalence estimates.

The NCRG funded the 1997 meta-analysis of prevalence studies by Harvard Medical School because of the insurmountable problems that would have been posed by a national prevalence study including the time, exorbitant expense, and the lack of consensus about which scale to use. Meta-analysis, a research technique used to review and synthesize a body of research, offers a valuable alternative.

Encourage an intellectual climate that challenges existing views and assumptions and allows for a resolution of fundamental, unresolved issues in the field.

Gambling researchers have paid very little attention to the high rate of comorbidity with other psychiatric disorders. The implications of this issue are potentially significant for measuring, preventing and treating disordered gambling.

Financial Resources

Encourage support for high quality research on disordered gambling

NCRG OFFERS INSIGHTS

Testimony to the National Gambling Impact Study Commission

behavior by the federal government and the foundation community.

The field of disordered gambling has been compared to the under-developed state of alcoholism research in the late 1960s and early 1970s. An infusion of significant support is vital to the development of the gambling field.

Encourage all segments of the gaming industry to support the National Center for Responsible Gaming.

The casino industry has provided the venture capital to launch innovative scientific research on disordered gambling. The other segments of the gaming industry can make a powerful statement and set an example for the entire private sector by joining NCRG's donors as responsible corporate citizens.

Along these lines, we encourage the commission to recognize the important role that the private sector plays in supporting research.

Encourage public policy makers at the local, state and federal level to support studies that are based on scientific, peer-reviewed research.

The National Gambling Impact Study Commission should encourage government entities to use only the leading scientists, as recognized by their peers and the major funding sources, to consult on the development of requests for proposals and to review proposals according to the rigorous criteria used by the National Institutes of Health and the National Center for Responsible Gaming.

Bridging Research and Practice

Encourage the improvement of training and elevation of standards for clinicians.

Organizations that provide training and certification in the addictive disorders should be encouraged to find ways to stay in touch with developments in the field of disordered gambling research.

Encourage collaboration between researchers, clinicians and institutions to strengthen the national network of helplines currently in existence.

The national helpline number offers an important form of early intervention;

however, the existing system needs to be strengthened and expanded. Furthermore, the potential of helpline data for research should be mined. The data could serve as a warning mechanism by alerting researchers and clinicians to shifting trends in gambling abuse.

Encourage dialogue between scientists, clinicians, and the public about disordered and underage gambling research.



Workshop at conference, "New Directions in Gambling Addiction Research."

National Research Council Uses NCRG-Funded Research

The National Gambling Impact Study Commission charged the National Research Council (NRC) of the National Academy of Sciences, one of the most respected academic bodies in the nation, with studying the impact of problem and pathological gambling. The National Center for Responsible Gaming has played a pivotal role in this important study.

In 1998, the NRC invited leading scholars from fields relevant to the study of disordered gambling to conduct a 15-month study. Ten of the investigators currently working on NCRG-funded studies were invited to present their research to the panel. The panel's membership includes NCRG-funded investigators Howard Shaffer and Ken Winters and NCRG advisory board member Linda Cottler. Perhaps most significantly, the NRC panel was granted permission to use the prevalence database developed by Harvard Medical School's Division on Addictions with grant support from the NCRG.

Concerning the NRC study and the role of the National Center for Responsible Gaming, Christine Reilly noted during her Nov. 11, 1998, testimony to the National Gambling Impact Study Commission:

We hold a very high opinion of NCRG's investigators, an opinion that is shared by many of the most prestigious academic bodies in the country, including one employed by the National Gambling Impact Study Commission. The National Research Council (NRC) of the National Academy of Sciences has been engaged by the commission to study the social and economic impact of pathological gambling. This past year, the NRC



Linda Cottler, Ph.D. (Washington University School of Medicine in St. Louis) and Ken Winters, Ph.D. (University of Minnesota) are members of the National Research Council's Committee on the Social and Economic Impact of Pathological Gambling. Cottler is a member of the NCRG's advisory board. Winters is the principal investigator of an NCRG-funded research project on youth gambling.



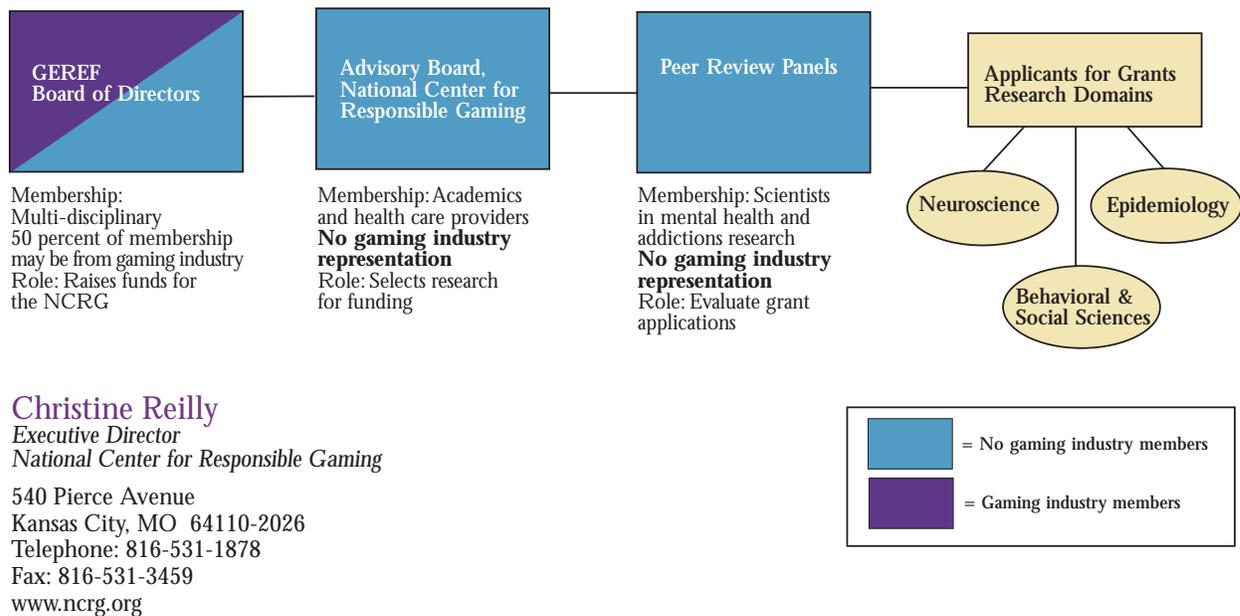
convened groups of leading experts in the field to address the Committee on the Social and Economic Impact of Pathological Gambling. Ten of the presenters selected by the NRC serve as key personnel on NCRG-funded research projects: Robert Ladouceur, Université Laval; Peter Goyer and William Semple, VA Medical Center Cleveland; Howard Shaffer, Harvard Medical School; Ken Winters, University of Minnesota; David Comings, City of Hope National Medical Center; Randy Stinchfield and Roger Svendsen, Minnesota Institute of Public Health; Tony Toneatto, Addiction Research Foundation; and Lori Rugle, Trimeridian.

NCRG ORGANIZATION

Independent and Respected

NATIONAL CENTER FOR RESPONSIBLE GAMING *A Division of the Gaming Entertainment Research and Education Foundation*

Organizational structure parallel with National Institutes of Health



The NCRG has modeled its organizational structure and decision-making procedures on the National Institutes of Health (NIH), ensuring that the highest standards are employed in evaluating research grant proposals submitted to the NCRG.

BOARD OF DIRECTORS

The Gaming Entertainment Research and Education Foundation

The National Center for Responsible Gaming is an unincorporated division of the Gaming Entertainment Research and Education Foundation, a tax-exempt nonprofit organization. The foundation was created in 1996 to address disordered and underage gambling through research and public education. According to foundation bylaws, at least 50 percent of the governing board must represent sectors other than the gaming industry. The following served in 1998:

Maj. Gen. Paul A. Harvey (Ret.), chairman
President and CEO
Signature Works

William Boyd, president
Chairman and CEO
Boyd Gaming Corporation

Robert Boswell, Ph.D.
Executive Vice President
Pioneer Health Care

Thomas Brosig
President, Mid-South Region
Park Place Entertainment Corporation

Roland W. Burris
Of Counsel
Buford, Peters, Ware & Zansitis

F.M. "Bud" Celey
President and CEO
Foxwoods Resort Casino

Sue Cox
Executive Director
Texas Council on Problem and Compulsive Gambling

Frank Fahrenkopf, Jr.
President and CEO
American Gaming Association

Frank Fertitta III
President and CEO
Station Casinos, Inc.

Arthur Goldberg
Executive Vice President and President
Hilton Gaming
Hilton Hotels Corporation

David A. Korn, M.D.
Assistant Professor
University of Toronto
Visiting Professor 1998-99
Harvard Medical School

Alfred C. Lomax
Airport Police Chief
Kansas City International Airport

Brian McKay
Vice President and General Counsel
International Game Technology

Carol O'Hare
Executive Director
Nevada Council on Problem Gambling

Philip G. Satre
President and CEO
Harrah's Entertainment, Inc.

Glenn Schaeffer
President, CFO and Treasurer
Circus Circus Enterprises, Inc.

Howard J. Shaffer, Ph.D.
Director
Division on Addictions
Harvard Medical School

Louis W. Sullivan, M.D.
President
School of Medicine
Morehouse College

Steven A. Weiss
Chairman of the Board
Casino Data Systems, Inc.

Pauline Yoshihashi
Senior Vice President
Abernathy, MacGregor & Frank

Judy Patterson, secretary and treasurer
Senior Vice President and Executive Director
American Gaming Association

THE NCRG ADVISORY BOARD

The NCRG's advisory board determines the focus of NCRG's initiatives and selects research projects for funding. It is composed of academic researchers, health and social services professionals and other experts in addiction and disordered gambling.

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*Executive Vice President
Pioneer Health Care*

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*Professor of Psychology
University of California, San Diego*

Linda Cottler, Ph.D.
*Professor of Epidemiology in Psychiatry
Washington University School of Medicine in St. Louis*

William Eadington, Ph.D.
*Director
Institute for the Study of Gambling and Commercial Gaming
University of Nevada, Reno*

Richard Evans, Ph.D.
*Distinguished University Professor of Psychology
Director, Social Psychology/Behavioral Medicine Research
& Graduate Training Group
Director, Social Psychology Program
University of Houston*

Elizabeth George
*Executive Director
North American Training Institute
Duluth, Minn.*

Sue Giles
*Director
Addiction Technology Transfer Center
University of Missouri - Kansas City*

Frederick Goodwin, M.D.
*Professor of Psychiatry and Director
Center on Neuroscience, Medical Progress and Society
The George Washington University Medical Center*

Suck Won Kim, M.D.
*Associate Professor of Psychiatry
University of Minnesota Medical School*

Barry Kosofsky, M.D., Ph.D.
*Assistant Neurologist
Massachusetts General Hospital
Assistant Professor of Neurology
Harvard Medical School*

Lisa M. Najavits, Ph.D.
*Assistant Professor of Psychology
Harvard Medical School
Associate Psychologist
McLean Hospital and Massachusetts General Hospital*

Francisco Napolitano, Esq.
*Attorney at Law
Board Member, American Academy of
Health Care Providers in the Addictive Disorders*

Peter E. Nathan, Ph.D.
*Professor of Psychology
University of Iowa*

David Self, Ph.D.
*Assistant Professor of Psychiatry
Yale University School of Medicine*



Left to right: Suck Won Kim, M.D. (University of Minnesota Medical School), David E. Comings, M.D. (The City of Hope National Medical Center), Lisa Najavits, Ph.D. (McLean Hospital and Harvard University Medical School) at the NCRG Conference.

THE NCRG PEER REVIEW PANELS

The peer review panels evaluate the scientific merit of research proposals submitted to the NCRG. Members are drawn from a national pool of leading scientists, active and productive researchers recognized by their peers and by major funding sources as experts in mental health and addiction research.

Behavioral and Social Science Peer Review Panel

Richard I. Evans, Ph.D., chairman
*Distinguished University Professor of Psychology
Director, Social Psychology/Behavioral Medicine Research &
Graduate Training Group
Director, Social Psychology Program
University of Houston*

Mark Appelbaum, Ph.D.
*Professor of Psychology
University of California, San Diego*

Mitchell Berman, Ph.D.
*Assistant Professor of Psychology
University of Southern Mississippi*

Robert Booth, Ph.D.
*Associate Professor, Addiction Research & Treatment
University of Colorado Health Sciences*

G. Ron Frisch, Ph.D.
*Associate Professor of Clinical Psychology
& Consulting Psychologist
Psychological Services Centre
University of Windsor*

Barbara Mellers, Ph.D.
*Professor of Psychology
Ohio State University*

Peter Nathan, Ph.D.
*Professor of Psychology
University of Iowa*

Kenneth J. Sher, Ph.D.
*Frederick A. Middlebush Professor of
Psychology
University of Missouri-Columbia*

Neuroscience Peer Review Panel

Barry Kosofsky, Ph.D., M.D., chairman
*Assistant Neurologist
Massachusetts General Hospital
Assistant Professor of Neurology
Harvard Medical School*

Vincent Chiappinelli, Ph.D.
*Professor and Chair of Pharmacology
Director, Neuroscience Program
The George Washington University*

Seth Eisen, M.D.
*Associate Professor of Medicine
St. Louis VA Medical Center*

Suck Won Kim, M.D.
*Associate Professor of Psychiatry
University of Minnesota Medical School*

Richard LaBrie, Ph.D.
*Director
National Technical Center for
Substance Abuse Needs Assessment*

Elizabeth Matthew, M.D.
*Assistant Professor of Radiology
Beth Israel Deaconess Medical Center-West*

David Self, Ph.D.
*Assistant Professor of Psychiatry
Yale School of Medicine*

Robert Sutherland, Ph.D.
*Professor of Psychology & Psychiatry
University of New Mexico*



NCRG advisory board members Richard Evans, Ph.D. (left) and Barry Kosofsky, M.D., Ph.D. (right), chaired the most recent peer review panels for the NCRG.

NCRG DONORS

The Venture Capitalists of Gambling Research

Founding contributors **Boyd Gaming Corporation** and **Station Casinos, Inc.** provided the start-up costs for the National Center for Responsible Gaming and pledged a total of \$1.8 million over a 10-year period. In addition, the following contributors have made annual donations to the NCRG. As of March 1, 1999, the total amount pledged through 2006 is \$5 million.

\$300,000

Caesars World
Circus Circus Enterprises, Inc.
Grand Casinos, Inc.
Hilton Hotels Corporation
International Game Technology
The Lincy Foundation
Mirage Resorts, Inc.

\$100,000-\$299,000

Aztar Corporation
Coast Resorts, Inc.
Harrah's Entertainment, Inc.

\$50,000-\$99,000

Boomtown, Inc.
Casino Data Systems, Inc.
Empress Riverboat Casinos, Inc.
Hollywood Casino Corporation
Horseshoe Gaming, Inc.
Rio Suite Hotel & Casino
Showboat, Inc.
Shuffle Master Gaming, Inc.



William Boyd, chairman and CEO of Boyd Gaming Corporation, presents a check for \$54,913 to retired Maj. Gen. Paul Harvey, chairman of the Gaming Entertainment Research and Education Foundation. The contribution, earmarked for disordered gambling research through the National Center for Responsible Gaming, was over and above Boyd Gaming Corporation's annual contribution of \$100,000 to the NCRG.

\$10,000-\$49,000

Foxwoods Resort Casino
Harveys Casino Resorts
Mission Industries
Mohegan Sun
Southern Wine and Spirits of Nevada

The NCRG has received significant in-kind contributions from the University of Missouri-Kansas City, which provides office space and services, and from The George Washington University, co-sponsor and host of the recent NCRG conference "New Directions in Gambling Addiction Research."

1998 Gaming Hall of Fame Charity Dinner

The World Gaming Congress and the American Gaming Association (AGA) annually sponsor a dinner to honor the inductees into the Gaming Hall of Fame. The dinner benefits the National Center for Responsible Gaming and SafeNest, a Las Vegas-based organization that provides temporary assistance and shelter to abused women and their children. The following companies and individuals sponsored tables and provided in-kind contributions for this event in 1998.

Gold Sponsor (\$5,000)

International Game Technology*
Harrah's Entertainment, Inc.*
Rio Suite Hotel and Casino*
Mr. and Mrs. J.K. Houssels*
Corrao, Inc.*
Boyd Gaming Corporation
Caesars World*
Circus Circus Enterprises, Inc.
Eldorado Hotel & Casino/Silver Legacy Resort Casino
Foxwoods Resort and Casino
Marnell Corrao Associates
MGM Grand, Inc.
The Official Information Company

Silver Sponsors (\$4,500)

Hilton Hotels Corporation

Sponsors (\$3,000)

Casino America, Inc.*
JBA Consulting Engineers*
Prairie Meadows Racetrack & Casino*

Aztar Corporation
Cohn & Wolfe
Howard Hughes Corporation
Kummer Kaempfer Bonner & Renshaw
Marshall Management Company
Mirage Resorts, Inc.
Nevada Power Company
Paradigm Gaming Systems, Inc.
Paul-Son Gaming
PricewaterhouseCoopers
Showboat, Inc.
Southwest Gas Corporation
Spintek Gaming Technologies
Sprint
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YESCO

Sandy and Roger Peltyn
Kitty Rodman and Claudine Williams

*Amount of donation exceeded level of sponsorship

In-kind Sponsors

American Gaming Association
Caesars Palace
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Jon Tullis Studio
Las Vegas Hilton
Marketing Database Services
Nevada Color Litho
Southern Wine & Spirits of Nevada/Comstock Wine & Spirits

FINANCIAL STATEMENTS (UNAUDITED)

January 1, 1998 - December 31, 1998

National Center for Responsible Gaming and Gaming Entertainment Research and Education Foundation

BALANCE SHEET

Assets

Cash	\$1,488,600
Grants receivable*	1,648,100
Other assets	300
TOTAL ASSETS	\$3,137,000

*Grants pledged to GEREFF. Receivables are to be collected over the next nine years.

Liabilities

Research grants payable**	\$532,000
Other payables	5,500

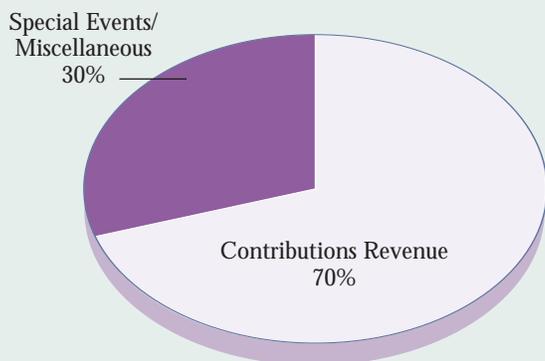
Equity 2,599,500

TOTAL LIABILITIES & EQUITY	\$3,137,000
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**Research grants are payable over multiple years based upon the research program term.

National Center for Responsible Gaming and Gaming Entertainment Research and Education Foundation

REVENUES



National Center for Responsible Gaming and Gaming Entertainment Research and Education Foundation

EXPENSES



*includes \$1,149,427 paid in research grants and expenses related to seminars, the conference and the distribution of the Harvard study.

All financial information as of December 31, 1998, compiled by Mayer Hoffman McCann L.C.

NATIONAL CENTER FOR
RESPONSIBLE GAMING

*A division of the Gaming Entertainment
Research & Education Foundation*

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