Foreword: The Science of Prevention

In the mid-1990s, the field of prevention of public health problems such as drug abuse, delinquency, conduct disorder, antisocial behaviors, and violence reached a watershed of research knowledge that brought authenticity to the concept of prevention science. Prompted by landmark studies and summative research reviews on risk and protective factors for drug abuse and criminal behavior (Hawkins et al., 1992; Hawkins et al., 1995), prevention science based upon etiology and developmental epidemiology attained a theoretical basis for preventive interventions.

Evidence-based knowledge from well-controlled preventive trials increased dramatically as reported by comprehensive meta-analyses that assessed the efficacy and effectiveness of a variety of theory-based preventive interventions (Mrazek & Haggerty, 1994; Tobler & Stratton, 1997; Bukoski, 1997; Durlak & Wells, 1997). Research reviews of prevention science in substance abuse and mental disorders demonstrated that adolescents exposed to certain theory-based preventive interventions, in comparison to controls, incurred statistically and clinically significant positive outcomes, including reduction in risk, enhancement of protective factors, and decreased incidence and prevalence of problem behaviors.

The most significant of all the research reviews and analyses in prevention science during the 1990s was edited by Patricia Mrazek and Robert Haggerty. This landmark volume was titled Reducing Risks for Mental Disorders and was published by the Institute of Medicine, National Academy Press in 1994. This volume for the first time created a coherent and logical definition of prevention that included three levels: universal, selective, and indicated prevention interventions. The study, commissioned by the U.S. Congress, recommended the avoidance of the definitional confusion caused by the medical model of primary, secondary, and tertiary prevention and instead promoted the concept of a distinct field of prevention in contrast to the fields of treatment and rehabilitation.

The text provided an authoritative, evidence-based review of prevention research that revealed that a substantial prevention science knowledge base already existed for a variety of mental and addictive disorders. Research from a number of well-controlled preventive trials indicated that certain theory-based prevention interventions for specific problem behaviors showed significant positive effects and that these tested preventive strategies were now ready to be implemented by professionals in the field of prevention. To do this, the volume recommended a strategic and coherent plan of action to bridge the gap between prevention science and practice in order to reduce a variety of public health problems nationwide.

This critically acclaimed work substantively reinforced the conceptual framework for a science of prevention that was heralded in an influential article published earlier by a number of leading prevention scientists, including John Coie, Norman Watt, Steven West, J. David Hawkins, and Beverly Long. The article was entitled “The Science of Prevention: A Conceptual Framework and Some Directions for a National
Research Program (Coie et al., 1993). In the view of these scientists, sufficient research evidence existed to warrant the use of the term “prevention science” to describe the advanced state of our knowledge.

As a result of significant progress in prevention science, prevention researchers and policy makers are now recommending the timely implementation at the state and community level of science-based prevention interventions that have demonstrated levels of efficacy and effectiveness.

The process of bridging the gap between science and practice is evidenced by the formation of partnerships between programs at the National Institutes of Health (NIH) and those agencies charged with the responsibility of promoting prevention at the national, state, and local levels. These action-oriented agencies include the U.S. Department of Education, the Substance Abuse and Mental Health Administration in the Department of Health and Human Services, and the Department of Justice, in particular the Office of Juvenile Justice and Delinquency Prevention.

Likewise, an independent professional research association, the Society for Prevention Research (http://www.preventionresearch.org), has identified the task of advocating for adoption of science-based prevention programs and policies at the state and community level as an important priority for immediate action.

However, this is only the beginning; there is much work ahead. What is still missing from the discussion of prevention science is the articulation of communication linkages between basic science in genetics and neuroscience and the behavioral and social sciences in psychology, epidemiology, education, and sociology.

Basic science provides a unique source of fundamental knowledge that promises to advance the field of prevention science, if barriers between basic research and applied prevention science can be permeated through increased communications and implementation of integrated basic and applied research studies. A good example of bridging the gap between basic and applied research is occurring at the University of Kentucky’s Center for Prevention Research under the direction of Richard Clayton, Ph.D. At this prevention center funded by the National Institute on Drug Abuse (NIDA), neuroscientists involved in the study of reward centers in the brain and novelty seeking in animals are collaborating with communications researchers who are measuring sensation-seeking in humans and testing targeted media drug prevention messages for high-risk youth.

A second critical need is to bridge the gap between evidence-based prevention research from multiple problem areas such as drug abuse, delinquency, and antisocial behaviors and to communicate prevention findings from these disciplines to prevention policy makers and program administrators. As part of this process, it is important that science-based prevention principles and practices emerging from prevention research are translated into consumer friendly packages that practitioners can readily adopt for implementation at the state and local level. To be successful, the development of scientifically sound and user-friendly prevention packages will require the active interaction of prevention researchers with prevention practitioners working collaboratively on the development of science-based prevention programs and policies that seek to prevent multiple problem behaviors.

Prevention science reveals that problem behaviors may share common risk and protective factors, and it identifies rich and provocative findings from preventive intervention trials within specific problem areas that may offer important insights for
the prevention of specific problem behaviors and for the prevention field in general. Research is demonstrating that the implementation of science-based prevention programs for high-risk youth in elementary school can lead to increased bonding to school, significant educational outcomes, and reduced substance abuse when measured later in high school (Hawkins et al., 1999).

It is quite possible that in the near future, a “cost economy” of prevention programming could be reached (Bukoski & Evans, 1998). Cost efficient prevention could occur when prevention practitioners systematically identify common risk and protective factors for multiple public health outcomes, such as substance abuse and delinquency, and implement a core set of science-based preventive interventions that have been thoroughly tested through controlled research.

The current volume edited by Dr. Diana Fishbein is an important scientific commentary on the unique contributions of basic and applied science related to antisocial behaviors, criminality, substance abuse, and related mental disorders. This volume provides a highly relevant integration and synthesis of research knowledge from scientific disciplines fundamental to critically important public health problems that adversely impact millions of Americans.

The challenge of this text is the same one that confronts the science of prevention—the integration of basic and applied prevention science into a common framework that recognizes the contributions of both domains. In the future, prevention science will need to address research questions that may require collaborative investigations that wed the best of both basic and applied prevention science into a more meaningful research enterprise. Prevention science needs to creatively promote synergy and productive partnerships between scientists in centers of research excellence and practitioners in communities across the nation.

The chapters in this volume describe a rich and intensive research base and promote a more rigorous understanding of antisocial behavior. Collectively the book chapters raise important future research questions that must be addressed by partnerships of scientists and practitioners who will need to penetrate categorical barriers between their disciplines. The process of expanding prevention science to the study of research dissemination and diffusion of innovative practices offers exciting and requisite developmental experiences for new career prevention scientists who will take our science into the next millennium.

Most importantly, the results of an emerging prevention science will provide valuable science-tested preventive interventions that, if implemented with fidelity by the practitioner community, can lead to significant reductions in the cost and suffering caused by antisocial behavior and related public health problems. Investments today in new and better partnerships between scientists and practitioners hold the key to the successful transition of prevention science into practice.

William Bukoski, Ph.D.
Associate Director, Division of Epidemiology and Prevention Research
National Institute on Drug Abuse, National Institutes of Health
Rockville, Maryland
July 1999
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About the Authors

Ernest S. Barratt, Ph.D., is the Marie B. Gale Centennial Professor of Psychiatry at the University of Texas, Medical Branch, where he has been on the faculty since 1962. He formerly taught at the University of Delaware and Texas Christian University, and was a special NIH fellow at the Brain Research Institute at the University of California at Los Angeles. His research since the mid-1950s has focused on impulsivity and impulse control disorders. He was a co-founder and past president of the International Society for the Study of Individual Differences. He is currently chief of the Cognitive Neuroscience Laboratory and Psychodiagnostic Service.

Fred S. Berlin, M.D., Ph.D., received his education at a variety of centers, including McGill University in Canada and the Maudsley Institute in England. He is currently an associate professor in the Department of Psychiatry and Behavioral Sciences at The Johns Hopkins University School of Medicine and the Director of the National Institute for the Study, Prevention and Treatment of Sexual Trauma. This program has been designated by the U.S. Department of Justice as a national resource site. Dr. Berlin has addressed a White House Conference on Childhood Sexual Abuse, the Juvenile Justice Subcommittee of the United States Senate, and Colleges of Judges in several states. He has also provided consultation to the National Conference of Catholic Bishops and the European Parliament. He has performed peer reviews for numerous professional journals, including the Journal of the American Medical Association and the American Journal of Psychiatry. He has been the recipient of a contract from the National Institute of Mental Health to prepare an annotated bibliography on sex offender etiology and treatment, and of a grant from the Guggenheim Foundation to study the activity of brain neurotransmitters during sexual arousal.

Robert J. Blatchley, Ph.D., received his doctorate in human development from the University of Maryland in 1974. He is a licensed psychologist who works with children and adults in private practice and is a research scientist with the Social Research Unit of Friends Research Institute. Dr. Blatchley’s major research interest is in the social developmental characteristics of addicts, their families and their children. Currently Dr. Blatchley is clinical supervisor for a major prevention research project involving addict mothers and their preadolescent children.

Don R. Cherek, Ph.D., received his doctorate from the University of Minnesota in 1972 after graduating from Creighton University. He held a research fellowship in the United State Public Health Service Psychopharmacology Training Program at Minnesota. Currently, he is a professor in the Department of Psychiatry and Behavioral Sciences at the University of Texas Health Science Center at Houston. Dr. Cherek has an international reputation for the development of various paradigms for human laboratory research studies. His research is supported by grants DA03166, DA10592, and DA10552 from the National Institute on Drug Abuse.

Diana D. Coates, M.A., L.P.C., is Director of the Youthful Offender Program, Clemens Unit, Texas Department of Criminal Justice. She previously was an associ-
ate clinical psychologist with TDCJ and worked as a psychological assistant at the Dallas County Juvenile Department and at the Mexia (Texas) State School. She is a graduate of Baylor University and the University of North Texas.

**Emil F. Coccaro, M.D.,** is a graduate of the New York University School of Medicine, with psychiatric training at the Mt. Sinai School of Medicine. He has authored over 120 publications and is the principal investigator on several National Institute of Mental Health, NIH grants on the biology and treatment of aggression. He has perfected techniques to study central neurotransmitter systems in relation to personality disorders. Currently he is a professor in the Department of Psychiatry, the Pritzker School of Medicine at the University of Chicago.

**David E. Comings, M.D.,** is Director of the Department of Medical Genetics, City of Hope Medical Center, Duarte, California. He is the author of over 400 papers, abstracts, and books on genetics in general, and in the past twenty years on the genetics and molecular genetics of a range of human behavior disorders. He directs a clinic where he has treated over 3,500 individuals with Tourette’s syndrome, attention deficit hyperactivity disorder, and conduct and other disorders. He is past president of the American Society of Human Genetics and past editor of the *American Journal of Human Genetics.*

**Stephen H. Dinwiddie, M.D.,** received his medical degree from Eastern Virginia Medical School in 1982 and completed a residency in psychiatry at the Washington University School of Medicine in St. Louis, Missouri. He is board certified in general, forensic, and addiction psychiatry. He is currently Professor of Psychiatry at Finch University of Health Sciences/The Chicago Medical School and Medical Director, Elgin Mental Health Center.

**Frank A. Elliott, M.D.,** is an emeritus professor of neurology at the University of Pennsylvania, and retired Chief of Neurology at the Pennsylvania Hospital. He undertook training at the National Hospital for Nervous Diseases at Queen Square in London. In 1959, he accepted an invitation to organize a Department of Neurology at Pennsylvania Hospital. Dr. Elliott published two textbooks and many chapters and papers on neurological subjects; between 1965 and 1993, he focused on the part played by covert developmental and acquired neurological and neuropsychiatric defects in recurrently violent individuals.

**Maurizio Fava, M.D.,** is associate professor of psychiatry at Harvard Medical School and Director of the Depression Clinical and Research Program at the Massachusetts General Hospital in Boston. He obtained his medical degree from the University of Padua School of Medicine, where he also completed residency training in endocrinology. After moving to the United States, he completed residency training in psychiatry at the Massachusetts General Hospital. He worked as a staff psychiatrist in the Clinical Psychopharmacology Unit for two years and then became Director of the Depression Clinical and Research Program in 1990. Over the past few years, Dr. Fava has been Principal and Co-Principal Investigator in many industry- and National Institutes of Mental Health-supported clinical research studies. His major research
interest has been the development of effective short-term and long-term strategies in the treatment of depression and depressive subtypes. Dr. Fava has conducted a number of clinical investigations on a particular depressive subtype characterized by the presence of anger attacks and high levels of irritability and hostility. His contributions to the study of treatment-resistant depression have also been significant, and he was Principal Investigator of the first published study on the pharmacological management of depressive relapses during long-term treatment with antidepressants. Dr. Fava has published more than 120 manuscripts in refereed journals and has edited two books. He has received several awards during his career and is on the editorial board of three international medical journals.

Alan Felthous, M.D., received his medical degree at the University of Louisville School of Medicine and completed his residency training in psychiatry at McLean Hospital and Harvard Medical School. He is Professor of Clinical Psychiatry and Director of Forensic Psychiatry Service, Department of Psychiatry, Southern Illinois University School of Medicine, and Medical Director of the Chester Mental Health Center in Chester, Illinois. Dr. Felthous is Chair of the Psychiatry and Behavioral Science Section, American Academy of Forensic Services, co-editor of Behavioral Sciences and the Law, and co-editor of the Forensic Psychiatry Section, Current Opinion in Psychiatry.

Carol S. Ferreira, Ph.D., is both a licensed clinical psychologist and an advanced registered nurse practitioner. She received her doctorate in clinical psychology from Kent State University and her master’s of science degree in nursing from Wichita State University. Dr. Ferreira completed a postdoctoral fellowship in HIV/AIDS at the University of California at Los Angeles and has an extensive background of practical experience working in rehabilitation settings with persons who have suffered brain damage. Currently, she is a clinical assistant professor in the School of Nursing at East Carolina University. Previously, she was an assistant professor of Community Health Nursing at Washburn University in Topeka, Kansas, where she supervised students in a correctional health care setting. She is active in presenting classes, training seminars, and conference programs focused on both the medical and psychological aspects of crime and corrections.

Diana H. Fishbein, Ph.D., has a joint Ph.D. in psychobiology and criminology from Florida State University. She currently directs the Transdisciplinary Behavioral Science Program for the Research Triangle Institute. Previously, she was Prevention Coordinator and Evaluator at the HIDTA Research Program centered at the University of Maryland and funded by the Office of National Drug Control Policy. Dr. Fishbein began her career as professor of criminology at the University of Baltimore and as a staff scientist first at the University of Maryland School of Medicine and subsequently at the National Institute on Drug Abuse, where she directed neurobiological studies on disruptive behavioral disorders and substance abuse. She then became a senior researcher with the U.S. Department of Justice to develop and evaluate crime prevention programs. Dr. Fishbein consults regularly to federal, state, and local agencies for purposes of expert witnessing in criminal court, training, technical assistance, scientific peer reviews and development of research protocols. In addition to policy papers, her publications include chapters, monographs, and scientific articles on antisocial
and violent behavior and drug abuse. She is the primary author of a textbook entitled *The Dynamics of Drug Abuse*.

**Wanda D. Foglia, J.D., Ph.D.**, received both her juris doctorate and her doctorate in criminology from the University of Pennsylvania. She is currently Chair of the Law and Justice Studies Department at Rowan University in Glassboro, New Jersey, where she teaches criminological theory and corrections courses. She is the principal investigator for the Pennsylvania segment of the Capital Jury Project, and her major research interests include cognition and crime, law-related education, and perceptual deterrence.

**Peter R. Giancola, Ph.D.**, received his bachelor’s degree in psychology from McGill University and his master’s degree and doctorate in clinical psychology from the University of Georgia. He did his clinical internship at the Western Psychiatric Institute and Clinic at the University of Pittsburgh School of Medicine. Dr. Giancola is currently an assistant professor of psychology at the University of Kentucky. His program of research focuses on neuropsychological correlates of aggression and the relation between acute alcohol consumption and aggressive behavior. Dr. Giancola’s research is currently funded by the National Institute on Alcoholism and Alcohol Abuse.

**David Goldman, M.D.**, has been Chief of the Laboratory of Neurogenetics of intramural NIAAA/NIH since creation of that laboratory in 1991. Dr. Goldman graduated from Yale University in 1974, received his medical degree from the University of Texas Medical Branch in 1978, and trained as an NIMH Clinical Associate prior to joining NIAAA. His main research interests are the identification of alleles (genetic differences) that influence behavior and the understanding of the mechanisms by which genotype influences behavior. His current work includes studies on the genetics of alcoholism and related psychopathology through the study of population isolates, particularly Native Americans, and the study of families with characteristic phenotypes such as EEG variants and low serotonin turnover. Dr. Goldman has also been an adjunct professor in the Department of Biological Sciences at George Washington University since 1987.

**Thomas E. Hanlon, Ph.D.**, is a research associate professor in the Department of Psychiatry, University of Maryland School of Medicine, Baltimore. He has background training and experience in clinical psychology and in designing and instituting treatment implementation studies, and he has worked for the past several years in the area of substance abuse research and correctional interventions. He has been an author or co-author in approximately twelve published articles in the behavioral sciences, most of which have involved treatment evaluations.

**James J. Hennessy, Ph.D.**, is a professor and past chairman in the Division of Psychological and Educational Services in the Graduate School of Education, Fordham University at Lincoln Center in New York City. He received his doctorate in counseling psychology from New York University, where he specialized in psychological measurement and psychometrics. He serves as a consultant to municipal and other public agencies on program design and evaluation, and has a particular interest...
in psychometric modeling of crime-rate data. He is co-author, with N. J. Pallone, of *Criminal Behavior: A Process Psychology Analysis* and *Tinder-Box Criminal Aggression: Neuropsychology, Demography, Phenomenology*, among numerous other books and research articles in the field.

**Richard J. Kavoussi, M.D.**, is a graduate of the New York Medical College, with psychiatric training at the New York State Psychiatric Institute. He has authored over fifty publications. Currently, he is the medical director in the CNS Division of Parke Davis Pharmaceuticals.

**Tom Kelley, M.S., Ph.D. (cand.),** received his master's degree in criminology from Florida State University in Tallahassee. He is currently a doctoral candidate in the Department of Criminology and Criminal Justice at Florida State, where he teaches classes in criminal and delinquent behavior and juvenile justice. He has worked as a Medical Disability Examiner for the Social Security Administration while satisfying the academic requirements for Ph.D. completion.

**Thomas A. Kent, M.D.**, is an associate professor in the Departments of Neurology, Pharmacology and Toxicology, and Psychiatry and Behavioral Sciences at the University of Texas Medical Branch at Galveston, and he is Director of Research there in the Department of Neurology. He completed his residency training in psychiatry at the University of Kansas School of Medicine, and in neurology at the University of Texas Medical Branch. He completed a basic and clinical psychopharmacology fellowship under Sheldon H. Preskorn, M.D. and is board certified in both neurology and psychiatry. He has received funding from a number of peer-review organizations, including the National Institutes of Health, and is the author of over 150 journal articles, chapters in books, and scientific abstracts and presentations.

**Scott D. Lane, Ph.D.**, received his doctorate in experimental psychology from Auburn University. He completed his postdoctoral training in psychopharmacology at the University of Texas Health Science Center at Houston under a fellowship from the National Institute on Drug Abuse. He is currently a member of the Human Psychopharmacology Laboratory in the Department of Psychiatry and Behavioral Sciences at the University of Texas Health Science Center at Houston. His research interests include laboratory measurement of variables related to pathological behavior, including risk taking, aggression, and impulsivity. Relevant research projects are supported by NIDA grants DA 10592 and DA 10552.

**Michele J. Liebm an, B.S.**, is a graduate student in psychology at the University of Houston at Clear Lake. She is the chief research technician in the Cognitive Neuroscience Laboratory at the University of Texas Medical Branch, Galveston. Her interests include psychometrics, neuropsychology, and learning theory.

**Dwaine McCallon, M.D.**, is a board-certified pediatrician with a lifelong interest in child development and learning problems. He is the medical director of a 1,000-bed medium security prison and supervises the medical care in a boot camp as well as three honor work camps of inmates. He began the first treatment study for attention
deficit disorder in prison populations ten years ago. His present research has extended into Tourette’s syndrome, obsessive thinking including the fantasies of sex offenders, and determining behavioral warning signs for future violent crime in adolescents and children. Having presented his work at several national meetings, he is collaborating on an extensive work with Dr. Comings to be titled *Treatable Criminal Minds*.

**Brian McNamee, M.D.**, is currently in the private practice of radiology and the practice of law in greater Metro Cleveland.

**David N. Nurco, D.S.W.**, research professor in the Department of Psychiatry, University of Maryland School of Medicine, Baltimore, has been a prominent contributor to national substance abuse policy and research for the past thirty-five years. His expertise focused on the area of narcotic addiction and in examining the connection between drug use and crime. He served as principal investigator for numerous federally funded studies dealing with the treatment of drug abusing offenders and drug abuse prevention efforts involving inner-city youth. Sadly, Dr. Nurco died in December, 1998. He will be sorely missed by his friends, colleagues, and others in the field.

**Richard L. Nygaard, U.S.C.J.**, has been a judge for eighteen years and is on the U.S. Court of Appeals for the Third Circuit. He received his juris doctorate from the University of Michigan and an LL.D., *honoris causa*, from Edinboro University of Pennsylvania. He has written and lectured extensively on penal philosophy, to promote both research into the genetics of criminal misbehavior and a more humane treatment of rehabilitable miscreants. He is a lecturer in law at Pennsylvania State University at Erie and sits on its Masters in Psychology Advisory Board.

**Kevin O’Grady, Ph.D.**, is an associate professor in the Department of Psychology, University of Maryland at College Park. Having a background of training and experience in clinical psychology, he specializes in data processing and statistical analysis in the medical and behavioral science areas, serving as a consultant and collaborator in substance abuse prevention and treatment research. He has numerous technical and clinical publications.

**Nathaniel J. Pallone, Ph.D.**, is University Distinguished Professor of Psychology at The State University of New Jersey at Rutgers, where he previously served as dean and as academic vice president. He had earlier served at the University of Notre Dame and at New York University and, on leave from Rutgers, as a visiting professor in the Department of Legal Medicine at Harvard’s School of Public Health and as Hill Foundation Distinguished Visiting Professor at the University of Minnesota in Duluth. His clinical experience includes twenty-two years as chairperson of the Classification Review Board for Sex Offenders in the New Jersey Department of Corrections. He also served as a consulting psychologist to the New York State Narcotics Addiction Control Commission, the Connecticut Commission on Criminal Administration, and the Criminal Justice Research Center in Albany, New York, and to social service agencies in the northeast and midwest. His current research interests focus on the psychobiology

**Roy W. Pickens, Ph.D.**, has a doctoral degree in experimental psychology from the University of Mississippi (1965) and received postdoctoral training in psychopharmacology from the University of Minnesota (1965–1966). In 1966 he was appointed to the faculty in the Departments of Psychiatry and Psychology at the University of Minnesota, where he taught, conducted research, and provided clinical service. In 1985 Dr. Pickens was appointed Director of the Division of Clinical Research at the National Institute of Drug Abuse in Rockville, Maryland. In 1986 his duties at NIDA were extended to include associate directorship for AIDS. In 1989 he was appointed Scientific Director of the NIDA Intramural Research Program (Addiction Research Center) in Baltimore. He held this position until 1994, when he returned to the laboratory as Chief, Clinical Neurogenetics Section and Associate Director for Training and Education. In July 1999, he accepted the position of Associate Vice President for Research and Director of Research and professor in the Department of Psychiatry at Virginia Commonwealth University.

**Wendy Richardson, M.A., L.M.F.C.C.**, is a Licensed Marriage, Family, Child, Counselor and Certified Addictions Specialist who has been working in the mental health field for twenty-two years. Ms. Richardson is nationally recognized as an expert on ADHD and co-occurring addictions, eating disorders, and relationship issues. She provides training for criminal justice personnel, teaches graduate level courses, and trains professionals on ADHD in America and abroad. Ms. Richardson’s new book, *The Link Between ADD and Addiction: Getting the Help You Deserve*, is the first book that sensitively addresses the problems of ADD and co-related addictions, eating disorders, and behavioral addictions; it offers practical solutions in a reader friendly format that people can use to actively address their problems.

**Ty A. Ridenour, Ph.D., M.P.E.**, received his doctorate in school psychology in 1996 from Ball State University in Indiana and his masters in psychiatric epidemiology in 1998 from Washington University School of Medicine. Presently, he is an NIMH postdoctoral fellow in biostatistics and epidemiology at Washington University School of Medicine (grant MH17104). Dr. Ridenour’s research interest in the epidemiology and development of antisocial behavior grew out of his four years of counseling and assessment of juvenile delinquents at an Indiana county Boy’s Residential Unit and in school settings. His current area of research interest is the etiology of antisocial behavior and substance misuse.
Matthew Robinson, Ph.D., received his doctorate from the Florida State University School of Criminology and Criminal Justice in Tallahassee and is an assistant professor of criminal justice at Appalachian State University in North Carolina. His research focuses primarily on criminological theory, criminal victimization, crime prevention, and criminal justice education. His most recent publications appear in the British Journal of Criminology, Journal of Crime and Justice, the Advances in Criminological Theory series, Journal of Security Administration, International Journal of Risk, Security, and Crime Prevention, and Environment and Behavior.

Dace S. Svikis, Ph.D., received her doctorate in clinical psychology from the University of Minnesota in 1989. After completing a postdoctoral fellowship and internship, she became Director of the Center for Pregnancy and Addiction (CAP) at Johns Hopkins Bayview Medical Center in Baltimore in 1992. In addition to her CAP administrative activities, she engages in clinical practice, teaching, and research and has consultancies with several large state and national organizations. She is currently an associate professor in the Department of Psychiatry and Behavioral Sciences and also has an appointment in the Department of Obstetrics and Gynecology at the Johns Hopkins University School of Medicine. Her research interests are primarily in the development and evaluation of interventions to reduce licit and illicit drug use by pregnant women.

Ralph E. Tarter, Ph.D., obtained his doctorate in biological psychology from the University of Oklahoma in 1971. Since then his research has focused on the causes, correlates, and consequences of alcohol and drug abuse. On these topics he has edited or co-edited ten books and authored over 250 articles and book chapters. Currently he is Director of the Center for Education and Drug Abuse Research; this is a NIDA-funded multidisciplinary prospective investigation of 1,000 youth and their families.


Marianne B. M. van den Bree, Ph.D., received a master’s degree in experimental psychology from the Vrije Universiteit in the Netherlands in 1988. She received a doctorate in human genetics from Virginia Commonwealth University in Richmond in 1994. She is currently employed as a research scientist by Hopkins Bayview Medical Center in Baltimore, and works at the National Institute on Drug Abuse in the same city. She is also an adjunct assistant clinical professor in the Department of Human Genetics at Virginia Commonwealth University. She has published scientific articles on headaches in school children and the genetics of sports participation, heart rate and blood pressure, and diet. Since working at NIDA, she has focused on substance abuse and has published books and articles on genetic aspects of alcoholism, drug use, and drug abuse/dependence.
Michael M. Vanyukov, Ph.D., is Director of Genetics Module at the Center for Education and Drug Abuse Research (CEDAR) and assistant professor of psychiatry and human genetics at the University of Pittsburgh. Dr. Vanyukov graduated from Moscow State University in 1978 and received his Ph.D. from the Institute of Medical Genetics, USSR Academy of Medical Sciences, in 1984. In December 1990, he emigrated to the United States and received his postdoctoral training in psychiatry at the Western Psychiatric Institute and Clinic at the University of Pittsburgh. His main research interest is in the genetic studies of substance abuse and antisociality and the search for both genetic and environmental factors influencing variation in human behavior. His current work includes studies of substance abuse and antisociality and the search for both genetic and environmental factors influencing variation in human behavior. His current work includes studies on the association of candidate genes and environmental characteristics with the risk for substance abuse as well as childhood and adult behavioral traits in families and populations.

Cathy Spatz Widom, Ph.D., received her doctorate in psychology from Brandeis University in Waltham, Massachusetts, with a specialization in personality and psychopathology. She taught previously at both Harvard and Indiana University and currently is professor of criminal justice and psychology at the State University of New York at Albany. She is a fellow of the American Psychological Association (Division 41, Law and Psychology) and the American Psychopathological Association. She has published extensively on topics including child abuse and neglect, juvenile delinquency, violence, psychopathy, female criminality, and prostitution. Dr. Widom has received numerous awards for her research. Her recent research focuses on the intergenerational transmission of violence and she is currently engaged in a large study to determine the long-term consequences of early childhood abuse (physical and sexual) and neglect. She serves on the Committee on Law and Justice at the Commission on Behavioral and Social Sciences at the National Research Council.