

Supporting Statement A for

Brain Power! The NIDA Junior Scientist Program and the Companion Program, *Brain Power! Challenge (BP)*

Extension of Currently Approved Collection
OMB Control No. 0925-0542
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Prepared by:
Danya International Inc.
8737 Colesville Road, Suite 1100
Silver Spring MD 20910

Submitted by:
Cathrine Sasek, Ph.D., Project Officer
National Institute on Drug Abuse
National Institutes of Health
6001 Executive Boulevard, Room 5230
Rockville, MD 20892
Phone: (301) 443-6071
Fax: (301) 443-6277
Email: csasek@nih.gov

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A. Justification

A.1. Circumstances Making the Collection of Information Necessary

The purpose of this Supporting Statement is to update the current OMB Supporting Statement (OMB No.: 0925-0542; Expiration Date: April 30, 2008) requesting Office of Management and Budget (OMB) clearance continuation until April 30, 2010, to measure the effectiveness of the *Brain Power!* Program's ability to: (1) increase children's knowledge about the biology of the brain and the neurobiology of drug addiction; (2) increase positive attitudes toward science, careers in science, and science as an enjoyable endeavor and stimulate interest in scientific careers; (3) engender more realistic perceptions of scientists as being of many races, ages, and genders; and (4) determine the Program's impact on attitudes toward and intentions about drug use. *Brain Power!* is composed of "*Brain Power!* The NIDA Junior Scientist Program" and "*Brain Power!* Challenge." "*Brain Power!* The NIDA Junior Scientist Program" is a science-based curriculum developed for children in kindergarten through fifth grade. "*Brain Power!* Challenge" is the companion program developed for middle school students in grades 6 through 9.

This project is divided into three phases. During Phase I, which is now completed, Danya International developed the curriculum of the *Brain Power!* Program and conducted a pilot study to preliminarily assess the effectiveness of the curriculum. Results of this pilot study¹ evaluating the curriculum on a sample of 112 fourth and fifth graders showed that exposure to the "*Brain Power!* The NIDA Junior Scientist Program" curriculum was associated with a statistically significant change in knowledge about alcohol and drugs and their effects on the

¹ Holtz, K.D. and Twombly, E.C. 2007. A preliminary evaluation of a science education curriculum on changes in knowledge of drugs in youth. *Journal of Drug Education*, Vol. 37(3), pp. 317-33.

brain's neurobiology. Students who entered the program with high preexisting rates of knowledge tended to maintain those rates, while students at lower levels gained more knowledge. The Theory of Reasoned Action, upon which this curriculum is based, posits that attitude and behavior change flow from knowledge acquisition after presentation of persuasive information. Outcome data from this evaluation suggest that the curriculum has promise as a drug prevention tool, through its impact on knowledge gain.

Phase II of this project will conduct a larger evaluation of the effectiveness of the curriculum with a larger sample of subjects in grades other than the fourth and fifth grades. Because the pilot study only included a small sample of participants, Phase II of this project will assess the effectiveness of the curriculum with a larger and more diverse sample of students. In addition, while the results of the aforementioned pilot study suggested that the curriculum has promise as a prevention tool, this premise was not specifically measured. Therefore, the initial study of 2005 is now being extended, and a clearance extension is requested for the OMB clearance obtained in 2005.

Phase III will consist of dissemination of evaluation findings, and based upon results, the marketing of the *Brain Power!* curriculum to educational systems nationwide.

Both curricula (hereinafter referred to as *Brain Power!*) were developed by Danya International, Inc. (Danya), in support of the National Institute on Drug Abuse's (NIDA) Science Education Program under contract N01DA-9-2070 and 263-01-D-0188. *Brain Power!* is a science-based curriculum that consists of six modules:

Brain Power! Jr. Scientists (K-1)	Brain Power Jr. Scientists (2-3)	Brain Power Jr. Scientists (4-5)	Brain Power! Challenge
Module 1: You Could be a Scientist	Module 1: Ooey Goey: Making Sense of Scientific Inquiry	Module 1: Drugs in Society	Module 1: An Introduction to the Brain and Nervous System
Module 2: Meet the Scientists	Module 2: Brains in a Box: What Your Brain Can Do	Module 2: Your Amazing Brain	Module 2: Legal Doesn't Mean Harmless
Module 3: Your Amazing Brain	Module 3: Sending and Receiving Messages	Module 3: Neurotransmission	Module 3: Drugs in the Cupboard
Module 4: Keeping Your Brain Healthy	Module 4: Medicines and Drugs: What's Helpful, What's Harmful	Module 4: How Stimulants Affect the Nervous System	Module 4: Wedding out the Grass
Module 5: Protecting Your Brain	Module 5: The Science Behind Smoking	Module 5: Alcohol, Marijuana, and Inhalants	Module 5: Drugs on the Street
	Module 6: What Drugs Really Do	Module 6: What is Addiction?	Module 6: Drugs in the News

Each module is designed to stimulate interest in science through drug-abuse and prevention education, which includes exposure to scientific inquiry, the biology of the human brain, and the neurobiology of drug addiction. To measure the effectiveness of “*Brain Power!*” both primary and secondary goals have been identified. The primary goals of the *Brain Power!* curricula include the following:

- Increasing children’s knowledge about the biology of the brain and the neurobiology of drug addiction
- Increasing positive attitudes toward science, careers in science, and science as an enjoyable endeavor, and stimulating interest in scientific careers
- Promoting more balanced perceptions of scientists as being of many races, ages, and genders

The secondary goal is to measure the impact of the *Brain Power!* curricula as drug abuse prevention tools.

The goals of the *Brain Power!* curricula will address both the goals of NIDA’s Science

Education Program and the objectives of the Science Education Abuse Partnership Award (SEDAPA) program. The *Brain Power!* curricula are consistent with NIDA's mission to lead the Nation in bringing the power of science to bear on drug abuse and addiction and are authorized under 42 USC 285o, which outlines NIDA's purpose to conduct and support research on drug abuse and addiction. Specifically, the *Brain Power!* curricula are aligned with the following two goals of NIDA's Science Education Program: (1) increasing scientific literacy; and (2) stimulating interest in scientific careers.

Evaluation of the *Brain Power!* curricula will also address the objectives of the SEDAPA program. Originally conceptualized in 1993 and reissued in 1999 and again in March 2002, the purpose of the SEDAPA program is "to encourage the development and evaluation of programs that foster an understanding of neuroscience and the biology of drug abuse and addiction among K-12 students" and other populations.

A.2 Purpose and Use of the Information Collection

The information collected for this project is a continuation of the evaluation of the *Brain Power!* curricula that began during the current clearance period. Ensuring a diverse, nationally-representative sample and the associated recruitment of schools to participate in the evaluation of the program has presented unforeseen challenges and has resulted in the continuing need to use the previously approved data collection instruments beyond the current expiration date.

The scientific literacy of the Nation's youth is a matter of great concern to the scientific community (NIDA, 1999a). According to NIDA, an adequate number of drug abuse researchers is critical for advances to be made in the ability to treat and eliminate drug abuse (NIDA, 1993). For the National Institutes of Health (NIH) and other Federal agencies to continue to fulfill the

mission of conducting research in all fields of science, there is a need to increase science literacy among U.S. students and ensure that an adequate numbers of students enter science education tracks and eventually pursue careers in the biomedical sciences (NIDA, 1999b). There is also a need to attract young students to the sciences related to drug abuse, addiction, and prevention. By attracting young students to science and science careers, the potential shortage of U.S. scientists may be avoided.

The NIDA Science Education Program contains materials and special programs that target youths in grades K–12 (NIDA, 1999a). Through the Program, NIDA addresses inadequacies related to science education and scientific literacy among U.S. students. The primary purpose of the Science Education Program is to generate enthusiasm for science by using the science related to drug addiction to involve youths in the process of scientific inquiry. A second goal is to encourage students to pursue careers in science, particularly in the field of drug abuse research (Mathias 1996).

The *Brain Power!* program has at its core the understanding that successful drug-science education, scientific literacy, and drug prevention begins with a basic understanding of drugs and their physiological effects on the body. Implementing and evaluating the *Brain Power!* curricula will provide NIDA with information about the program's effectiveness as a science education program. The results may benefit other Federal Government agencies such as the Substance Abuse and Mental Health Services Administration (SAMHSA), Centers for Disease Control and Prevention (CDC), and Office of National Drug Control Policy (ONDCP). It is anticipated that the evaluation of the *Brain Power!* curricula will reveal how the drug-addiction knowledge, attitudes toward science, and perceptions of the target population change after the implementation of the *Brain Power!* curricula. The results of the evaluation will provide valuable

information that will add to the current literature base and possibly guide future endeavors.

The primary goal of the *Brain Power!* curricula is to increase scientific understanding and improve attitudes toward science. A second goal is to present information which may deter future drug use. Researchers, however, suggest that the long-term impact of these programs can be unpredictable (Botvin, 1996; Kumpfer, 1999). Although some research (Johnston, O'Malley, & Bachman, 1996) suggests that providing information about the physiological effects of drugs can be an effective deterrent to future drug use, Botvin (1995) has found that for high-risk or vulnerable children, this information can actually result in increased interest in experimentation with drugs. It may be inferred from the current body of literature that any program that imparts drug-related information to children should be evaluated for both its immediate impact on knowledge and attitudes and intentions to use.

Brain Power! Curricula Implementation. The *Brain Power!* curricula will be implemented in K–9 classrooms in urban and suburban school districts. It is estimated that 20 K–9 teachers will participate in the implementation of the *Brain Power!* curricula as either control group or treatment group teachers. Each participating teacher in the treatment group will be required to consent to a set of implementation guidelines that specify required teaching elements of the *Brain Power!* curricula. Control group teachers will implement their routine instruction without the addition of the *Brain Power!* curriculum; treatment group teachers will augment their routine instruction with the *Brain Power!* curriculum. Specifically, treatment group teachers will incorporate the *Brain Power!* curriculum into their routine instruction by including the following: *Brain Power!* main activity and video clip or CD-ROM activity. Inclusion of extension activities, discussion questions, student resources, and additional activities is optional.

Brain Power! Curricula Evaluation. The overall goal of the evaluation is to gather process as well as outcome data that will enable the Project Team to determine the effectiveness of the *Brain Power!* curriculum as a science education program to increase children's knowledge about drugs and the neurobiology of drug addiction, stimulate children's interest in science as well as the likelihood that they will pursue scientific careers, and deter drug use over time. As mentioned previously, the *Brain Power!* curricula will be implemented in grades K–9. Participants in grades K–9 will be presented with the *Brain Power!* curricula and will be evaluated to determine the effectiveness of the curricula to increase scientific understanding, improve attitudes toward science, and determine the Program's ability to deter future drug use. The participating schools will be recruited from urban and suburban areas such as Atlanta, Georgia; Washington, DC; and Raleigh-Durham, North Carolina, and will be diverse in nature. Control group and treatment group classrooms will be matched according to basic demographics, grade level and test scores for reading, math, and science. The participating classrooms will be randomly assigned to either the control group or treatment group experimental conditions.

Evaluation of the *Brain Power!* curricula will be conducted by an external Project Team that is experienced, objective, and familiar with conducting evaluations in school settings. The evaluation will include an examination of the impacts of the program using measures that are closely aligned to the curriculum's focus and objectives. The impact of the *Brain Power!* curricula will be measured using a pre-/post-test methodology. Students will complete the study instruments prior to their exposure to the *Brain Power!* curricula and again immediately after implementation of the curriculum. Hierarchical Linear Modeling will be used to examine the statistical and practical (effect-size) significance of findings, controlling for the possibility of confounding differences among students, teachers, and schools.

During the evaluation, the following information will be collected from students before and after implementation of the *Brain Power!* curriculum:

- Knowledge about the biology of the brain and the neurobiology of drug addiction
- Knowledge about drugs and drug addiction
- Attitudes toward science and scientists
- Understanding of scientific careers and the diversity of individuals who pursue science as a career
- Attitudes towards drug use
- Intentions to use drugs

During the evaluation period, selected classrooms will be visited during curriculum delivery to observe both how the material is being used and the engagement of students during instruction. An observation protocol has been developed that measures both degree and fidelity of implementation and student behavior and engagement. The observations will be accompanied by debriefings to discuss instruction with teachers and use their comments to inform improvements to the overall curriculum.

To assess impacts on students, students in both treatment and control group classrooms will complete pre and post assessments, including a test of knowledge on the biology of the brain and the neurobiology of drug addiction and attitude surveys covering interest in science, understanding of diversity of scientists, and attitudes toward drugs and drug use. All measures have been pilot tested with the target audience.

Test of Knowledge. The Test of Knowledge is a 20-item multiple-choice instrument developed by Danya and Westat, Inc. (Westat), to assess children's knowledge about drugs and drug abuse before and after the curriculum intervention. Testing items were designed to

specifically address the various information modules presented in the *Brain Power!* curricula. Items require students to demonstrate knowledge, application, and synthesis of content material. Separate knowledge questionnaires were developed for each Brain Power! curricula.

Attitude Toward Science Questionnaire. To measure children's attitudes toward science, the *How I Feel About Science* questionnaire (HIFAS) (Rim, 1971) was adapted. HIFAS is a 36-item instrument designed for use in elementary school settings that measures six aspects of children's attitudes toward science. It includes attitudes toward science class, liking for science in comparison to other subjects, and attitudes toward science professions.

Attitudes and Intention to Use Drugs Questionnaire. Several instruments that have been used and tested with children will be modified to measure children's attitudes toward drugs and drug abuse and their intentions to use drugs in the future. Items were adapted from the following three measures: the Tentative Drug Use Scale (TDUS) (Horan & Williams, 1975); Alcohol Expectancies Questionnaire (AEQ) (Goldman, Christiansen, & Brown, 1982); and American Drug and Alcohol Survey (ADAS).

TDUS is designed for use in evaluating drug abuse prevention programs. It has been used as a posttest for a drug abuse prevention project and as a survey research instrument to determine the extent of a drug problem in a given locale. AEQ is the most widely used alcohol-expectancy measure in both research and clinical settings. It has well-demonstrated concurrent and predictive validity and, uniquely, has been found to increase prediction of alcohol use and abuse. ADAS is a widely used scale developed by leading researchers in the field of drug prevention research in conjunction with NIDA. It is designed to assess students' experience with a variety of drugs and includes two versions: Children's and Adolescents'. The Children's version, developed using a 4th-grade reading level, was designed for elementary school students in the 4th

to 6th grades. The Adolescent version, developed using a 6th-grade reading level, is intended for students from 6th through 12th grades. Both versions will be used with the appropriate age group during this study.

In order to reduce the burden on students, respective survey items on the science and drug attitudinal surveys will be presented as two sections of one instrument and administered at the same time. Included in Attachments 1 through 7 are the following measures for children:

- Form A: Interview Protocol for K–1, Knowledge
- Form B: Interview Protocol for K–1, Attitudes
- Form C: Knowledge Questionnaire, Grades 2–3
- Form D: Attitude Questionnaire, Grades 2–3
- Form E: Knowledge Questionnaire, Grades 4–5
- Form F: Attitude Questionnaire, Grades 4–5
- Form G: Knowledge and Attitudes Questionnaire, Grades 6–9

Our assessment will also examine effects on teachers and teaching. After completing the *Brain Power!* curricula, teachers in the treatment group will complete a 30-minute survey. The purpose of the survey will be to gather feedback regarding ease and fidelity of implementation as well as changes in knowledge and understanding of the neurobiology of addiction. The survey will collect the following information:

- Teacher demographic and background data
- Data on how the curricula were used
- Teachers' assessments of the ease of use and quality of the materials
- Teachers' assessments of the content of the curriculum units
- Impacts on the overall curriculum

- Teachers' perceptions of student engagement and learning
- Self-assessments of changes in teachers' own knowledge

A brief survey will be administered to the control group teachers as well. The purpose of the survey will be to collect demographic and background data, as well as assess their understanding of the neurobiology of addiction. Attachments 8 through 15 comprise the following measures for treatment and control group teachers:

- Form H: Survey for Grade K–1 Treatment Group Teachers
- Form I: Survey for Grade K–1 Control Group Teachers
- Form J: Survey for Grade 2–3 Treatment Group Teachers
- Form K: Survey for Grade 2–3 Control Group Teachers
- Form L: Survey for Grade 4–5 Treatment Group Teachers
- Form M: Survey for Grade 4–5 Control Group Teachers
- Form N: Survey for Grade 6–9 Treatment Group Teachers
- Form O: Survey for Grade 6–9 Control Group Teachers

In order to assess curriculum implementation and student engagement, classroom observations are planned in a sample of treatment classes. As part of their agreement to participate in the study, treatment group teachers will consent to a set of implementation guidelines that specify required teaching elements of the *Brain Power!* curricula. Guidelines will specify that teachers include in their instruction the main activity and video clip or CD-ROM activity for each module. Extension activities, discussion questions, student resources, and additional activities will be optional. Selected classrooms will be visited during curriculum delivery to observe both how the material is being used and the engagement of students during

instruction. An observation protocol has been developed that measures degree and fidelity of implementation as well as student behavior and engagement. The observations will be accompanied by debriefings to discuss instruction with teachers and use their comments to inform improvements to the overall curriculum. Included in Attachment 16 to this proposal is Form P, Classroom Observation Protocol for *Brain Power!* Lesson Modules.

To augment these data, an online survey will be implemented on the NIDA Web site to gather information from teachers who have used the *Brain Power!* curricula and want to provide feedback. This survey will be automated so that any teacher willing to complete the form on line will be able to provide those data anonymously. Participants will volunteer to complete the survey after seeing the banner on the NIDA Web site. No more than 100 teachers will respond to this survey. Included in Attachments 17 and 18 to this proposal are Form Q (Online Survey for Teachers, Grades K–5) and Form R (Online Survey for Teachers, Grades 6–9).

Finally, input from parents will be gathered, as parental reaction and opinion is an important part of this investigation. A short feedback form will be included in the parent materials with questions about reactions to the materials and the degree to which parents find the curriculum informative and appropriate. Questions will be printed on one side of a prepaid postcard that will be returned directly to Westat. Our experience suggests that it is often difficult to get parents to respond to data collections unless they are personally interested in an issue. Therefore, the postcard will also include an item that gauges parental interest in the study and requests participation in a subsequent telephone interview. Project staff anticipate conducting telephone interviews with 10 percent of the parents of students using the curricula. Using two approaches to gather information from parents increases our confidence in the quantity and quality of the data. Included in Attachments 19 and 20 to this proposal are two parent measures:

Form S (Parent Feedback Postcard) and Form T (Protocol for Parent Interviews for *Brain Power!* Study).

Federal Government reports (see Section A.16)—to be completed approximately 2 months following each data-collection period—will be produced in a timely manner and will contain information about children who receive the *Brain Power!* curricula (the treatment group classrooms) as well as children who do not (the control group classrooms).

A.3 Use of Information Technology and Burden Reduction

An online survey will be used during the data collection to gather information from teachers who have used the *Brain Power!* curricula and want to provide feedback. The online survey will be administered twice: immediately before the teachers implement the curriculum (pretest) and after they have implemented the curriculum (posttest). In addition, a power analysis was done to determine the minimum number of respondents needed to provide adequate statistical power for our analyses. Every effort has been made to minimize the number of questions in the measures that will be used in this assessment, basing measures on those that have been used previously or have been reported on in the literature. All of these features of the assessment design were put in place to minimize the burden on respondents.

A.4 Efforts to Identify Duplication and Use of Similar Information

Brain Power! is unique in its focus on science education on drugs of abuse. Other curricula exist that educate about the function of the brain and the work of scientists, and many drug-abuse prevention programs (such as DARE, LifeSkills, and Allstars) are widely available. However, to our knowledge, no curriculum presently exists that presents information on the

brain, how drugs change the brain, and scientists who study drugs and the brain. The *Brain Power!* curricula will be widely distributed at no cost to schools around the country. It therefore has the ability to make a substantial impact on the public health of U.S. schoolchildren. The effectiveness assessment proposed in this document will provide unique data on the curricula and their impact on public knowledge and health. Therefore, these data are key to the successful dissemination of the program. After a thorough review of the literature using all the major academic databases, the conclusion was reached that these data are not presently available in the literature. Therefore, the work proposed in this assessment is not duplicative in any way.

A.5 Impact on Small Businesses or Other Small Entities

No small businesses will be involved in this study. Study respondents are students, teachers, and parents. Information collection for this study is anticipated to have a potential impact on science education programs at the local and State levels.

A.6 Consequences of Collecting the Information Less Frequently

Each grade level will be assessed before and after instruction. Data collection will occur twice for each grade level: at pretest and posttest. This research design has been chosen to measure change in knowledge and attitudes and attribute that change directly to the intervention under study. To answer our research questions, these data cannot be collected less frequently. Every effort has been made to minimize the time burden of data collection by shortening the length of each question to make its point concisely, reducing the number of questions on each measure so there are no redundancies, ensuring that forms are clear and easy to read, and using only the minimum number of measures necessary to answer our research questions. Furthermore, researchers will read the questionnaires aloud while the students follow along,

answering on their own response sheets.

A.7 Special Circumstances Relating to the Guidelines of 5 CFR 1320.5

This information fully complies with guidelines of 5 CFR 1320.5.

A.8 Comments in Response to the *Federal Register* Notice and Efforts to Consult Outside Agency

A notice soliciting a 60-day public comment on this planned data collection was published in the *Federal Register* on February 26, 2008 (Volume 73, Number 38, Page 10262). One public response was received that questioned the spending of federal resources on this project. In response to this comment the following statement was developed for publication of a 30-day notice in the *Federal Register*:

NIDA's mission is to lead the Nation in bringing the power of science to bear on drug abuse and addiction. There are 2 critical components to this mission: 1. the strategic support and conduct of research across a broad range of disciplines; 2. ensuring the rapid and effective dissemination and use of the results of that research to significantly improve the prevention of drug abuse and addiction, its treatment, and policy. The *Brainpower! Challenge* project is one of NIDA's many dissemination projects that is anticipated to improve the prevention of drug abuse and addiction among children and youth. These dissemination and diffusion projects complement NIDA's research projects to identify, develop, and refine effective efficient methods, structures, and strategies that test models to disseminate and implement research-tested health behavior change interventions and evidence-based interventions in prevention and treatment.

From its research NIDA knows that in order for prevention efforts to be effective educational programs must involve teachers, peers, parents, and the entire

community. In 1996 NIDA convened a national prevention research conference on preventing drug use among children and adolescents. From it a research-based guide was prepared to provide prevention principles that a school or community can use to implement a prevention program specifically tailored to meet each community's particular needs. And the public response to the guide is evident from the continued requests for the guide - an average of about 20,000 per month, and more than 200,000 copies distributed to date. The *Brainpower! Challenge* project provides a tool for science education that involves teachers, peers, parents and the entire community, and adds to any prevention programs implemented in the community.

During the development of the product under study, project staff consulted with a variety of experts in the field who provided comments and feedback. Table 1 below provides a list of these experts and their affiliations. If necessary, these individuals will provide additional consultation during the evaluation period.

Table 1. Experts Consulted During Development of the Brain Power! Materials

Name	Affiliation
• Beverly Osteen	Pine Ridge Productions
• William Cameron, Ph.D.	The Oregon Health Sciences University
• George Koob, Ph.D.	The Scripps Research Institute
• Carol Sigelman, Ph.D.	The George Washington University
• Julie Lerner	Christa McAuliffe Elementary School
• Andrea Sutton	Christa McAuliffe Elementary School
• Carlton Erickson, Ph.D.	The University of Texas at Austin
• Patricia McGlashan	Penn State Geisinger Health System
• Water Burroughs	Burroughs Consultant
• Lynn Coy-Ogan	Morton Avenue Elementary School
• Shelly Tyrell	Morton Avenue Elementary School
• Danielle Ancitl	Taylor Elementary School
• Rod Baer	Taylor Elementary School
• Cindy Allen	Educational Consultant
• Judith Dillon	Educational Consultant
• Linda Harteker	Educational Consultant
• Roderick Combs	Nebraska National Guard Counterdrug Program

- Rochelle Schwarz-Bloom, Ph.D. Duke University Medical Center
- Victor Shamas, Ph.D. University of Arizona
- Mary Maddox Washington Research Institute
- Alex Koerger Brighton School
- Jason Lody, OFM Conv. St. James School
- Deborah Colbern, Ph.D. Brain-Exchange Electronic Mentorship Network
- Wendell Mohling, Ph.D. National Science Teachers Association
- Linda Strick Stout Elementary School
- Laura Kozell, Ph.D. Portland VA Medical Center
- Robert Malison, Ph.D. Yale School of Medicine
- Anna Rose Childress, Ph.D. University of Pennsylvania
- Theresa R. Franklin, Ph.D. University of Pennsylvania
- John Seibyl, MD Institute for Neurodegenerative Disorders
- Michael Byas-Smith, M.D. Emory University
- Denise Jackson, Ph.D. Northeastern University
- Eric Chudler, Ph.D. University of Washington

A.9 Explanation of Any Payment of Gift to Respondents

To attract reasonable participation and retention among educators, financial incentives will be offered to all participants. Teachers in our educational systems are under very high demands and workloads and are asked to successfully teach a great deal of content during each academic year. Asking them to incorporate curriculum which carries no proof of effectiveness requires extra work for them to undertake. Imposing this demand of incorporating untested curriculum into their lesson plans carries high stakes and teachers are taking a great risk. If teachers fail to meet certain standards as measured by state assessments, they can face serious penalties. By providing teachers with incentives for study participation, the unintended consequences of nonresponse are greatly decreased.

DeHavilland Associates and Westat, responsible for the recruitment of participants and implementation of the study, have numerous years of collective experience evaluating the effectiveness of various school curriculums. In their past efforts implementing and evaluating similar programs, they have firmly believed that such studies would not have been successfully implemented without the use of financial incentives. Both DeHavilland and Westat have

supplied letters stating their beliefs in the necessity of the use of incentives; these letters can be found in Attachment 22 of this application.

Teachers will receive incentives based on the number of students who return consent forms (regardless of participation, so as not to coerce). Teachers in the treatment group will receive a slightly larger incentive since they are being asked to implement the curriculum into their classrooms. Teachers in the control group are not being asked to implement the curriculum; rather the control group is for comparison purposes and will consist of “usual teaching procedures.” The specific incentives distributed to teachers in both the treatment and control groups are as outlined in Table 2 below.

Table 2. Teacher Incentives

Group	Number of Completed/Returned Consent Forms	Incentive for the 6-Month Duration
Treatment Teachers (all grades)	14 or fewer	\$300.00
Treatment Teachers (all grades)	15–20	\$400.00
Treatment Teachers (all grades)	21 or more	\$500.00
Control Teachers (all grades)	14 or fewer	\$200.00
Control Teachers (all grades)	15–20	\$300.00
Control Teachers (all grades)	21 or more	\$400.00

T-shirts, small toys, or redeemable coupons with a value under \$10 will be given to student participants upon completion of each data-collection event. These gifts will serve as reinforcement and compensation for the time taken to complete the questionnaires. According to behavioral theory, offering children small gifts or rewards serves as reinforcement of a desired behavior—in this case, for completing questionnaires—and as an incentive toward future compliance with that same behavior (Skinner, 1969). Danya has used incentives in this amount in other evaluations, with very positive results. All teachers participating in the study, whether assigned to the treatment group or control group classrooms, will be offered the *Brain Power!*

curricula free of charge as an incentive for participating in the study. No-cost classroom materials (such as educational curricula, videos, and facilitator guides) combined with monetary payments after each data-collection event have proven to be powerful incentives to teachers to encourage their participation in other research projects conducted by Danya, such as *You've Got a Friend*, a video-based intervention project designed to educate peers about children with Tourette syndrome (NIMH, R43 MH58518-01A1), and *Kidsdom*, an Internet-based alcohol prevention project designed to educate children about the effects of alcohol on the brain and behavior (NIAAA, R44 AA12580-01). Control group classroom teachers will receive the curriculum after the completion of data collection. Parents completing the interview will be offered an incentive of \$20 after each data-collection event.

A.10 Assurance of Confidentiality Provided to Respondents

The current project will fully comply with the NIH Privacy Act, *Federal Register*, September 26, 2002, Vol. 67, No.187, pages 60765-60768, Privacy Act Systems of Record Notice 09-25-0156 entitled "Records of Participants in Programs and Respondents in Surveys Used to Evaluate Programs of the Public Health Service, HHS/PHS/NIH/OD." The Privacy Act may apply to some data-collection activities. Through coordination with the NIH Office of Management Assessment, determination will be made as to whether the Privacy Act applies and will be indicated in the supplemental package for a specific study. When the Privacy Act is applicable, respondents will be told the statutory authorization for asking for the information; the purpose for which the information is being asked; whether responding to the request for information, in whole or in part, is voluntary; the consequences, if any, of not responding; and the extent of confidentiality. Cover letters and introductory materials accompanying all

questionnaires will indicate NIDA's Federal status and the purpose of the study.

All respondents will be informed during the consent procedure that their participation is voluntary and that no adverse consequences will result from refusing or terminating participation. All data collected in this study will be kept strictly confidential, and the identities of all participants will remain anonymous. Moreover, data collected from participants will not be shared with school personnel or parents. All participants will be issued an identification number at the beginning of the study, and the data collected during each period will be entered into a database immediately after it is received. The database will contain absolutely no identifying data; only identification numbers will be used during data entry. The questionnaires and surveys bearing the identities of the participants will be kept separate from the data, in locked file cabinets at Westat; only those with a need to access these files for purposes of assisting with the research will have access to these cabinets.

There is a Memorandum of Understanding between Danya and Westat that delegates IRB review authority to Westat's Institutional Review Board (IRB). Therefore, Westat's IRB is responsible for overseeing the evaluation of the *Brain Power!* curricula. Danya's Federalwide Assurance (FWA) number is 00000399, and the IRB registration number is 0000900. Westat's Federalwide Assurance (FWA) number is 00005551, and its IRB registration number is 00000695. The research protocol, consent forms, and instruments have been approved by Westat's IRB in accordance with the standards for involvement of human subjects in research.

A.11 Justification for Sensitive Questions

To determine whether the *Brain Power!* curricula actually achieve their primary and secondary goals as stated in section A.1, it will be necessary to ask drug-related questions and

collect data concerning subjects' attitudes toward the use of drugs and intentions to use drugs in the future. Every precaution will be taken during data collection to ensure the confidentiality of participants' responses to these questions. Written parental informed consent will be obtained prior to data collection, but children's answers to the questionnaires will not be shared with their parents or teachers. Before written child assent is obtained, children will be informed of the voluntary nature of their participation in the study and reassured of the confidentiality of their responses to the questionnaires. Instructions included with the surveys will confirm the voluntary nature and confidentiality of their responses as well as inform respondents that they do not have to answer any questions with which they are uncomfortable. All consent and assent forms have been reviewed and approved by Westat's IRB (Attachment 21).

A.12 Estimates of Hour Burden Including Annualized Hourly Costs

Data collection will take place with students before and after exposure to the curriculum. Adults will respond only after exposure to the curriculum. The estimate of hour burden, including number of respondents and frequency of response, is shown in Table 3 and the estimate of hour burden by each form, and aggregate hour burden is shown in Table 4 below. Annualized cost to adult participants is shown in Table 5 below. Wage estimates for teachers were obtained from the Human Resource Association of the National Capital Area's 2007 Salary and Compensation Survey (Springfield, Virginia). Wage estimates for parents were obtained from the U.S. Department of Labor Bureau of Labor Statistics, using the most recent available median wage estimates for the Washington DC MSA from May 2006. The estimates for the measures to be completed in elementary school are based on the time required by children who

participated in *Kidsdom* (NIAAA Contract No. R44 AA12580-01), a previous project conducted by Danya that used similar measures (see section A.2).

A.12.1. Number of Respondents, Frequency of Response, and Annual Hour Burden

Table 3. Estimate of Hour Burden

Type of Respondents	Estimated Number of Respondents	Estimated Number of Responses per Respondent	Average Burden Hours Per Response	Estimated Total Burden Hours Requested
Students (K–grade 5)	250	2	.5	250
Students (grades 6–9)	250	2	.5	250
Parents (K–grade 5)	25	1	.25	6.25
Parents (grades 6–9)	25	1	.25	6.25
Teachers (full evaluation)	20	1	.5	10
Teachers (online evaluation)	100	1	.5	50
Total	670			572.5
Annualized Burden Total	670			572.5

A.12.2. Hour Burden Estimates by Each Form and Aggregate Hour Burdens

Table 4. Estimate of Hour Burden by Each Form and Aggregate Hour Burdens

Type of Respondents	Estimated Number of Respondents	Estimated Number of Responses per Respondent	Average Burden Hours Per Response	Estimated Total Burden Hours Requested
Students (K–grade 5)	250	2	.5	250
Students (grades 6–9)	250	2	.5	250
Parents (K–grade 5)	25	1	.25	6.25
Parents (grades 6-9)	25	1	.25	6.25
Teachers (full evaluation)	20	1	.5	10
Teachers (online evaluation)	100	1	.5	50
Total	670			572.5
Annualized Burden Total	670			572.5

A.12.3. Estimates of Annualized Cost to Respondents for the Hour Burdens

Table 5. Annualized Cost Burden Estimates to Respondents*

Group	Number of Respondents	Estimated Number of Responses per Respondent	Average Burden Hours Per Response	Hourly Wage Rate	Respondent Cost
Parents (K–grade 5)	25	1	.25	\$19.81	\$123.81
Parents (grades 6–9)	25	1	.25	\$19.81	\$123.81
Teachers, all grades (full and online evaluation)	120	1	.50	\$25.18	\$1,510.80
Total Estimated Cost					\$1,758.42

*Assumes costs are associated only with adult respondents

A.13 Estimate of Other Total Annual Cost Burden to Respondents or Record Keepers

No capital, startup, or operational and maintenance costs are incurred by study participants in this information-collection activity.

A.14 Annualized Cost to the Federal Government

Total costs associated with the project are estimated to be approximately \$724,886 over a 3-year contract performance period. These costs cover all aspects of survey design, testing, data collection and analysis, report generation, and final modification to curriculum content and design. In addition, it is estimated that one full-time-equivalent NIDA staff member will spend 20 percent of his or her time (520 hours) to manage and administer the project. Assuming an annual salary of \$100,000, Government personnel costs will be \$60,000 over a 3-year period. The 3-year total project costs are thus \$784,886, with an annualized cost of \$261,629.

A.15 Explanation for Program Changes or Adjustments

This is a continuation project and a continuation of collection of information.

A.16 Plans for Tabulation and Publication and Project Time Schedule

This project covers a period from January 2003 to September 2009. The timeline for this project is provided in Table 6 below.

Table 6. Project Timeline

Task	Completed no later than
Revise evaluation design	Draft January 15, 2003; final January 30, 2003
Draft K-9 instruments	March 15, 2004
Draft MS instruments	October 30, 2004
Recruit schools for K-9 study	January 15, 2009
Group assignment: Treatment/Control	January 30, 2009
Confirm school participation	January 30, 2009
Distribute material to K-9 classrooms	February 15, 2009
Schedule assessments and visits	February 15, 2009
Collect data for K-9 study	May 1, 2009
Analyze data	ongoing
Provide preliminary K-9 report	July 15, 2009
Recruit schools for MS	January 15, 2009
Make Initial T/C assignments	January 30, 2009
Confirm schools	January 30, 2009
Distribute material to MS classrooms	February 15, 2009
Schedule assessments and visits	February 15, 2009
Collect data for MS study	May 1, 2009
Analyze data	Ongoing
Provide preliminary MS report	July 15, 2009

A.17 Reason(s) Display of OMB Expiration Date is Inappropriate

This request does not seek approval to not display the expiration date for OMB approval of the information collection.

A.18 Exceptions to Certification for Paperwork Reduction Act Submissions

This submission does not seek exceptions to certification for Paperwork Reduction Act submission.