

University of Pittsburgh

Annual Progress Report: 2007 Nonformula Grant

Reporting Period

July 1, 2010 – June 30, 2011

Nonformula Grant Overview

The University of Pittsburgh received \$3,932,889 in nonformula funds for the grant award period June 1, 2008 through May 31, 2012. Accomplishments for the reporting period are described below.

Research Project: Project Title and Purpose

Consortium on the Causes and Prevention of Violence - In this project we will link biological and environmental factors to violence and will examine the effect of a treatment model on behavioral outcomes and on brain function as well. Violent behavior is associated with certain neurotransmitters, and certain genes are linked to the function of these neurotransmitters. We will examine the links between these genes and violent behavior by examining the chain of connections between these genes, the function of regions of the brain believed to underlie aggression, and the course of violent behavior in a sample of adults whose history of violent behavior is well-described. We will test the effect of a treatment program on at-risk children for changes in aggression and changes in associated brain regions.

Anticipated Duration of Project

6/1/2008 - 5/31/2012

Project Overview

Primary Components of this Project. This project focuses on: (a) biological factors (genetic predictors and brain function) for aggression/violence in the context of environmental factors and (b) a promising treatment of boys at risk for violence on behavioral change and brain function as identified in (a). A strength of this proposal is the extensive data on aggression/violence and environmental causes from childhood to early adulthood in the Pittsburgh Youth Study (PYS) (N=1,009). Another strength is the involvement of the Stop Now And Plan (SNAP) Steering Committee to provide the SNAP program for boys age 12 and under at risk for violence. Finally, this project brings together experts on biological factors (genes and brain function), on environmental factors, and on treatment for children at risk for violence.

Genetic Predictors: Aims: (1) Among PYS adults, genotype eight genes linked to neurotransmitters that are associated with aggressive and violent behavior. (2) Evaluate the main

effects of genetic variation, environment variation, and gene-by-environment interaction on risk for aggression/violence.

Brain Function: Aims: (1) Examine links between brain regions underlying inhibition, emotion processing, and reinforcement responsivity in PYS men with chronic ($N = 45$) or transient violence ($N = 45$) and non-violent controls ($N = 45$). (2) Use results of genetic aim 2 and brain function aim 1 as a basis to test the mediation via brain function of genetic variation, environmental factors, and their interaction on aggression/violence. (3) For 10-12 year-old SNAP boys/controls ($n = 70$), describe the pre-treatment association between aggression or violence and brain regions underlying inhibitory control, emotion processing, and reinforcement responsivity. (4) For 10-12 year-old SNAP/control boys ($n = 70$), document treatment-specific changes in brain function that occur following the SNAP treatment program ($N = 35$) in comparison to the alternative treatment ($N = 35$).

Treatment Aims: (1) Evaluate the effectiveness of SNAP versus a control treatment on measures of aggression. (2) Examine moderation of treatment effects via brain function, child, family, demographic, and neighborhood risk factors. (3) Examine whether any changes in aggressive behavior result from changes in specific hypothetical mechanisms of change within the child (problem solving skills, emotional regulation skills, and socialization skills) or in terms of parenting behaviors.

Principal Investigator

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Other Participating Researchers

Jeffrey D. Burke, PhD; Dustin A. Pardini, PhD; Magda Stouthamer-Loeber, PhD; Vishwajit Nimgaonkar, MD; Bernard Devlin, PhD; Kodavali Chowdari, PhD; Mary Phillips, MD - employed by University of Pittsburgh

Expected Research Outcomes and Benefits

This project will generate crucial new information regarding the causes and prevention of violence. We will produce an explanatory model of the interaction between environmental risk factors and genetic factors for violence, with the further advantage of specifying the links from genetics to brain function and violence.

This research will also produce new evidence for Pittsburgh regarding the effectiveness of the SNAP treatment for children at risk, but not yet manifesting, violence. The direct benefit of the

intervention component of the research will be the provision of services to children in the Pittsburgh region. This evaluation will be conducted using high scientific standards for replication, which form the basis for further dissemination of the treatment program in Pennsylvania. This evaluation will not only identify whether the treatment is effective but will clarify effective mechanisms of change, both in terms of child and family behavioral change as well as child brain function.

Furthermore, a key element of the SNAP program is a cohesive referral network that will enhance the early identification and referral for services of children. The results of the evaluation will assist decision makers in the county government to support and expand the program through other funding streams.

This project will also yield benefits that address issues of health disparities. Again, direct benefit will go to the children who will participate in the treatment services provided, the majority of whom will be African-American. The project will also generate information on early behavioral risk factors and available treatment resources for parents and families in the Pittsburgh region, which will be made available to them through brochures disseminated through a network of community organizations. This project will also include training opportunities for young minority researchers who are interested in developing a career in research on violence prevention.

Summary of Research Completed

This consortium project has been funded by the Department of Health of the Commonwealth of Pennsylvania since June 2008. The following are the components of the work:

- a) Follow up of PYS participants
- b) Brain function study
- c) Genetic predictors study
- d) SNAP program evaluation study
- e) Minority training program

a) Follow-up of the PYS Participants

We are following up with the oldest and the youngest samples (920) of the PYS (N=1,009). The participants in the oldest sample are on average 35 years of age and those of the youngest sample are 28 years of age. We expect to interview at least 800 participants.

The sample is about half African-American and half Caucasian, with extensive documentation on their history of violence. During the re-contacting of participants, we collect deoxyribonucleic acid (DNA) (see below) and information on brain function by means of functional magnetic resonance imaging (fMRI) in a stratified sub-sample of aggressive and violent individuals (see below). The aim of the new data collection is to link genetic results to brain function, environmental history, and violent outcomes; thus, the interview assessment is necessary for the genetic and fMRI aims as well.

By June 2011, we had interviewed 711 participants and collected saliva from 624 participants for the genetic component of this study. Some participants refused to provide saliva samples, and remote saliva collection has not been completed at this point. The interview is set up in such a way as to automatically select potential participants for the fMRI study. When the interviewers come in for their weekly supervision, the interviews are downloaded onto laptops, and problems and questions are addressed.

We have spent a fair amount of person power locating participants. The participants in the oldest sample were last interviewed almost 10 years ago; therefore, many require extensive searching in order to be located.

We have received permission to perform interviews in the Allegheny County Jail and in Pennsylvania prisons and are also permitted to collect saliva in these institutions for the specific study (see below). We have completed 13 interviews in prison and have consent for another 23 inmates. Our interviewers often travel to outlying sites in Pennsylvania to complete these interviews.

We have not yet prepared manuscripts from these data because data collection is not yet complete.

b) Brain Function Study

Recruitment and data analysis for the adult fMRI sub-study continues to progress in line with the general PYS follow-up. A total of 117 participants, who were originally targeted for the fMRI sub-study, met various rule-out criteria, such as irremovable ferromagnetic objects, low intelligence, and severe obesity. Eight participants who were approached for the fMRI study refused to participate. To date, 89 participants have been successfully recruited and scanned, including 37 violent persisters, 21 violent desisters, and 31 non-violent healthy controls.

fMRI Data Preprocessing. Data preprocessing and individual participant analysis have been initiated for the emotion processing (i.e., faces) and reinforcement responsivity (i.e., card) tasks. All fMRI data are being preprocessed by statistical parametric mapping (SPM 5) as they are collected.

fMRI Data Analysis. Once preprocessing is complete, data from the emotion processing and reinforcement responsivity tasks are examined with a linear mixed-effects model using restricted maximum likelihood (ReML) estimation. This approach allows for population inferences by accounting for both within- and between-participant variability in the fMRI response. Within-individual contrast images generated from the first-level analysis are combined at the second level to generate group-based statistics. Contrasts of interest for the emotion processing faces task involve comparing the blood oxygen level-dependent (BOLD) response to the angry, fearful, and neutral faces versus the BOLD response to low-level gender identification control condition. In the card task that examines reinforcement responsiveness, the primary contrast of interest compares the BOLD response to monetary reward trials versus monetary loss trials. Once the contrasts of interest have been specified, each individual-level functional activation map is examined to ensure that adequate coverage of the targeted brain regions (e.g., ventral striatum, amygdala) has been obtained and that normalization procedures were successful.

Preliminary examination of group maps has confirmed that the tasks are activating the brain regions of interest (e.g., amygdala for faces task, ventral striatum for card task).

Child fMRI Study

The final set of boys completed the pre- and post-fMRI scans for the randomized SNAP trial this year. A total of 71 children were brought in for a pretreatment scan. Of those, 27 were deemed ineligible for a posttreatment scan because of severe motion in the scanner or failure to complete the scanning tasks. In addition, three children did not complete the posttreatment scan due to repeatedly missing appointments, and one child was excluded from the follow-up scan because he was placed on antipsychotic medication. A total of 40 boys completed posttreatment scans, but 12 had poor quality data due to excessive motion.

We obtained permission to expand the SNAP fMRI study by recruiting a matched normal control group of boys. Recruitment has come from passing out flyers and brochures to local community-based organizations, approaching families in existing longitudinal studies for potential participation, and screening families in local pediatricians' offices. A total of 54 boys have been screened for potential participation. To date, 34 boys have met eligibility criteria and were scanned. Due to excessive motion in the scanner, however, 11 of the boys who were scanned had to be excluded from analysis.

fMRI Data Preprocessing and Analysis. Preprocessing and analysis using the same procedures as those described for the adult study are currently underway for children in the SNAP fMRI study. Following the pretreatment scan, motion correction procedures are used to determine which children have unusable data due to excessive movement on the fMRI tasks. The families of children with excessive motion are then informed that they are not eligible for a posttreatment scan. Since the primary SNAP study has recently been completed, preparations for group level analysis are being initiated.

c) Genetic Predictors Study

PYS sample DNA repository update: We have received 697 saliva samples, including redraws, as of May 23 and representing 560 individual participants. The breakdown by ethnicity is as follows: African-American: n=285; Caucasian: n=247; Hispanic: n=1; Asian: n=4; mixed race and other categories: n=19; unknown ethnicity: n=4. All quality control measures were followed.

VNTR polymorphisms: In the previous report, 306 participants were analyzed for variable number of tandem repeat polymorphisms (VNTRs) in dopamine transporter (*DAT*), serotonin transporter (*5HTT*), and monoamine oxidase A (*MAOA*) genes. During the current period, we have genotyped an additional 202 participants for the above-mentioned polymorphisms.

SNP Genotyping: We have designed iPLEX genotype assays to genotype representative common "tag" single nucleotide polymorphisms (SNPs) in the serotonin transporter gene (*5HTT*) (n= 19), the monoamine oxidase A (*MAOA*) gene (n= 15), and a set of ancestry informative markers (AIMs) (n=34) to study the admixture information. The genotypes were generated through two

assay pools. Thus far, we have genotyped 372 participants using these two iPLEX assays, encompassing a total of 68 SNPs.

For this report, we analyzed the tag SNPs in 5HTT and MAOA genes to compare the violent and non-violent groups (Table 1). The African-American and Caucasian ethnicity samples were compared separately. In the initial analyses, corrections for population sub-structure were not employed. We found nominal differences ($p < 0.05$) for allele frequencies only in the African-American sample for the three *MAOA* SNPs (rs5905702, rs3788863, and rs17146683). We are currently genotyping additional samples for these SNPs, and more detailed data analyses will be conducted with the larger samples. As anticipated, some of the tag SNPs representing the African-American samples were not informative in the Caucasian samples.

We have analyzed a set of 34 AIM SNPs that are known to exhibit substantial differences between Caucasian and African-American samples. We have analyzed the PYS sample for their ancestry along with selected “Hapmap” samples; the latter are reference DNA samples collected for individuals representing Caucasian ancestry (CEU-central European descent from Utah) or African-American ancestry (ASW-African American from southwest U.S.) using “STRUCTURE” software (<http://pritch.bsd.uchicago.edu/structure.html>). We have excluded other ethnic groups due to the small group size (one of unknown population, one Hispanic, one mixed white and Hispanic, one mixed African-American and Hispanic, three Asian, two mixed white and Asian, and one mixed African-American and Asian). We modeled the AIM data assuming two ancestral groups. As seen in Figure 1 and Table 2, our observations closely match the results from the Hapmap dataset.

Table 1. Analysis of tag SNPs from 5HTT and MAOA genes in the PYS sample using violent and non-violent groups.

		<i>African-American samples</i>				<i>Caucasian samples</i>			
Gene	SNP	Allele*	Violent	Non-violent	P value	Allele*	Violent	Non-violent	P value
5HTT	rs1042173	G	0.2778	0.2613	0.7379	G	0.4778	0.4346	0.4777
5HTT	rs9303628	T	0.3828	0.3243	0.2678	C	0.5222	0.4692	0.3859
5HTT	rs11657536	A	0.007812	0.01802	0.4384	A	0.03333	0.01154	0.1698
5HTT	rs2054848	G	0.125	0.09009	0.3004	Not informative			
5HTT	rs3794808	A	0.4141	0.4099	0.9394	A	0.4333	0.4115	0.7178
5HTT	rs6353	A	0.09375	0.07273	0.4869	Not informative			
5HTT	rs140701	A	0.3125	0.3559	0.4096	A	0.4333	0.4077	0.6704
5HTT	rs140700	A	0.05469	0.07658	0.4351	A	0.1	0.09615	0.9154
5HTT	rs7212502	Not informative				Not informative			
5HTT	rs6354	C	0.2823	0.2838	0.9759	C	0.2	0.1885	0.8105
5HTT	rs25528	C	0.4758	0.5	0.6665	C	0.2	0.1885	0.8105
5HTT	rs12150214	C	0.3672	0.4189	0.3414	C	0.1889	0.1923	0.9434
5HTT	rs2066713	T	0.3047	0.2297	0.1223	T	0.3778	0.3923	0.8074
5HTT	rs4251417	A	0.01562	0.02252	0.6571	A	0.05556	0.1038	0.1707
5HTT	rs16965623	G	0.09375	0.1261	0.3592	Not informative			
5HTT	rs9903602	G	0.4841	0.464	0.7172	G	0	0.007692	0.404
5HTT	rs16965628	C	0.2656	0.2793	0.7827	C	0.05556	0.09231	0.2757
5HTT	rs2020933	A	0.2857	0.3288	0.4046	A	0.04444	0.08077	0.2488
5HTT	rs9903062	A	0.02344	0.02252	0.956	Not informative			
MAOA	rs1181275	T	0.01613	0.009091	0.6793	T	0.04545	0.1085	0.2124
MAOA	rs5905702	G	0.3438	0.4865	0.06654	T	0.2222	0.2791	0.4565
MAOA	rs3788863	T	0.3594	0.2162	0.0396	T	0.2222	0.2791	0.4565
MAOA	rs2310883	C	0.1587	0.1622	0.9528	Not informative			
MAOA	rs7051042	C	0.2097	0.2091	0.9928	Not informative			
MAOA	rs3027392	A	0.04762	0.1081	0.1719	A	0.04444	0.03846	0.8599
MAOA	rs6520897	A	0.03226	0.04505	0.6823	Not informative			
MAOA	rs6323	G	0.2031	0.1171	0.1234	G	0.2222	0.2946	0.3498
MAOA	rs7885398	T	0.3333	0.2703	0.3798	Not informative			
MAOA	rs3027399	C	0	0.009009	0.4464	C	0.06667	0.06923	0.9532
MAOA	rs3027405	T	0.25	0.2432	0.9203	T	0.04444	0.03077	0.6639
MAOA	rs2072744	G	0.2581	0.3333	0.3031	A	0.2667	0.3203	0.5019
MAOA	rs17146683	T	0.1094	0.02703	0.0238	Not informative			
MAOA	rs979605	T	0.4286	0.3694	0.4418	T	0.2222	0.2946	0.3498
MAOA	rs3027406	G	0.04688	0.06306	0.6568	G	0.04444	0.02308	0.4584

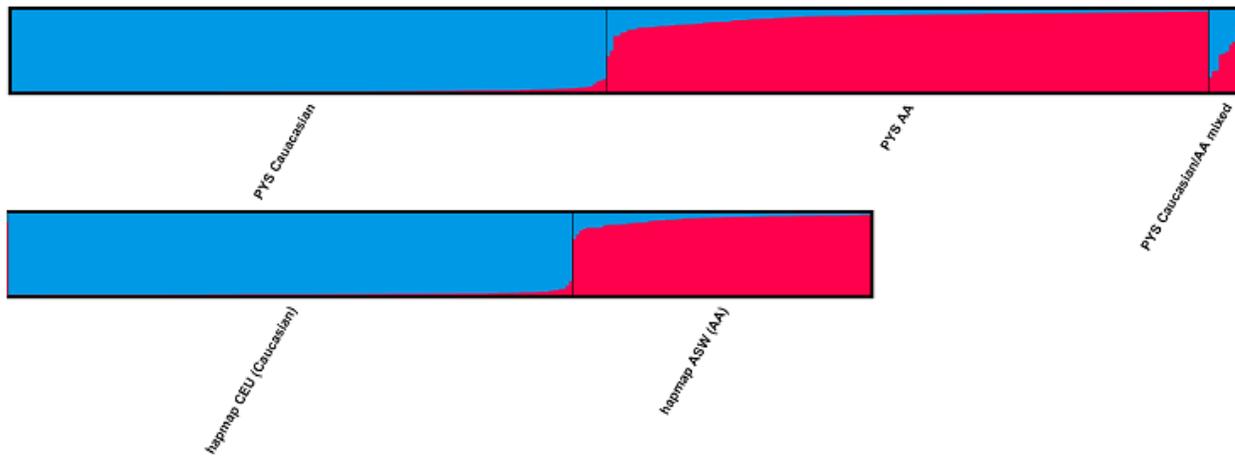
*The less common (minor) allele is listed and shown for each group in the Table 1.

Table 2. Inferred ancestry clusters using the PYS and Hapmap populations.

Population	Inferred cluster1*	Inferred cluster2*	Sample size
PYS Caucasian	0.013	0.987	174
PYS African-American	0.911	0.089	176
PYS mixed Caucasian/AA	0.498	0.502	10
Hapmap CEU (reference)	0.016	0.984	165
Hapmap ASW (reference)	0.926	0.074	87

* Estimate of contribution from each of two ancestral groups that were modeled.

Figure 1: Admixture analysis of PYS and Hapmap populations using 34 AIM SNPs.



The top panel shows the distribution of ancestry in the PYS participants (Caucasian, African-American, and mixed Caucasian and African-American). The bottom panel represents the Hapmap populations of Caucasians and African-Americans (ASW).

d) SNAP Program Evaluation Study

The SNAP intervention took place over the past year in three sessions (October, January, April) at the Auberle main site, the Auberle Homestead site, and the Holy Family site. The research protocols were followed successfully.

Study enrollment. During the last period of the project, we completed enrollment of the entire anticipated cohort of 252 participants.

Completion of follow-up assessments. Follow-up assessments are conducted at 3, 9, and 15 months after baseline assessments. As of June 2011, we have completed 89.1 percent (221 of 248) of the three-month follow ups, 81.1 percent (137 of 169) of the nine-month follow ups, and 79.2 percent (76 of 96) of the 15-month follow ups. Our standard for success for all follow ups is 90 percent. To increase our chances of achieving 90 percent for the 9- and 15-month follow-up periods, we have increased the participant payments for these assessments and have increased staff availability to help find participant contact information. Interviewers continue to travel to participants' last known address when other communication methods have failed. We will continue to explore strategies to enhance participation to achieve the highest retention rate possible for follow-up interviews.

Data collection procedures were employed successfully. Data collection is conducted via laptop computers, and the administration and scoring codes have been developed, tested, and deployed in the field. No concerns or issues have arisen regarding the collection, cleaning, maintenance, and storage of the data. Data safety and monitoring processes and protocols are reviewed at least monthly.

Randomization. At the time of the previous report, we had identified some concerns with differences across groups at randomization. With the additional data from the full cohort, there are no longer any differences evident between the groups after randomization on any child behavior checklist (CBCL) scales. The groups are also equivalent on age, intelligence quotient (IQ), race, and household income.

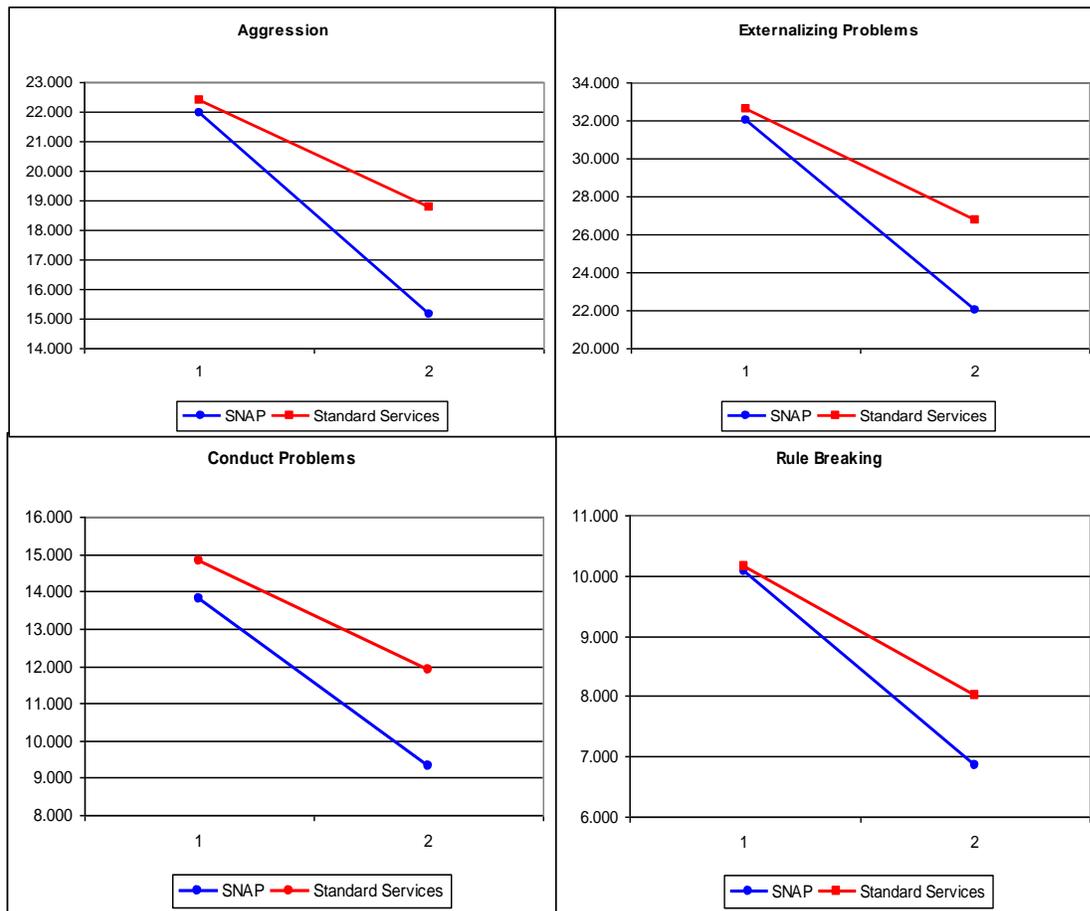
Descriptive features of the sample. The sample is reflective of a population of youths seeking or referred for help for disruptive behavior problems in urban environments.

- 50 percent of the sample reported a household income of \$14,999 or less; 14 percent above \$33,000
- 75 percent of the parents identified their child as African-American, 13 percent as white, and 10 percent with more than one racial category
- The average child in the study was 8.5 years of age
- 15 percent of the sample reported having had police contact
- The average estimated IQ of boys in the sample was 91.6.

Group differences in outcomes. Preliminary results, based on the data available from 172 participants at the three-month follow up, indicate significant differences on the Child Behavioral Checklist (CBCL) behavioral subscales for those in the SNAP group compared to those in the standard services group. Using repeated measure general linear models to examine changes from baseline to three months, it is clear that both groups show declines in each behavioral problem index. The SNAP treatment groups show significantly greater declines in aggression ($F(1,170) = 9.72, p = .002$), overall externalizing problems ($F(1,170) = 8.99, p = .003$), and conduct problems ($F(1,170) = 4.37, p = .04$). Differences on rule breaking behaviors approached, but did not meet, the established alpha value for significance ($F(1,170) = 3.54, p = .06$) (See SNAP Figure 1 below.)

Differences among those with the highest severity of problems. Initial discussion regarding the SNAP program in the Pittsburgh area was met with some skepticism by members of the

community, who believed that youths in this area experience a severity level of behavioral problems too great for a treatment program such as SNAP. However, when the present sample is restricted to only those children in either group who exceed severity cut-off scores on all three of the rule breaking, aggression, and conduct disorder subscales (n = 77 in SNAP and n=82 in standard services), the differences between the groups in favor of those in the SNAP group are even more stark than among the sample as a whole. On all four of the previously named CBCL subscales, each difference is statistically significant at the $p = .01$ level or better. Furthermore, among youths with severe behavioral problems at baseline, those in the SNAP group were 3.5 times more likely than those in the standard services group to be below clinical cut-off scores on all behavioral indicators at the three-month follow up.



SNAP Figure 1

e) Minority Training Program

Dr. Dustin Pardini continues to direct the minority researcher training program, which has targeted African-American (and more recently Hispanic) scholars at the undergraduate, graduate, and junior faculty levels. The overarching aim of the program is to provide young students and faculty from minority groups that are underrepresented in academia with the skills necessary to become successful researchers through participation in the consortium's research activities. The program continues to be supported by a close working relationship with Larry Davis, PhD,

director of the Center on Race and Social Problems (CRSP) and dean of the School of Social Work at the University of Pittsburgh, and Dr. Ralph Bangs, CRSP associate director. Drs. Celia Brownell and Julie Fiez of the diversity committee in the Department of Psychology; Dr. Lorie Johnson-Osho, assistant dean for graduate student programs; and Dr. Alan Lesgold, dean of the School of Education, have also assisted with recruiting minority students into the training program. The activities and accomplishments related to the training program over the reporting period are outlined below.

Minority Faculty Involvement

In 2010, one month of summer salary support was provided to Dr. William Elliott from the School of Social Work at the University of Pittsburgh. During this time, Dr. Elliott revised a manuscript investigating racial differences in academic achievement between African-American and Caucasian boys using the PYS dataset. This paper is now in press in the journal *Urban*

Education. Dr. Pardini served as a co-author and advisor on this manuscript. Dr. Elliott also gathered information collected as part of the PYS to characterize the multi-faceted problems disproportionately faced by African-American youths living in one of the most violent neighborhoods in Pittsburgh: Homewood. Although Dr. Elliott recently accepted a faculty position at the University of Kansas in the School of Social Welfare, he plans to continue to publish manuscripts using the PYS dataset once established in his new position.

Minority Researcher Summer Program

Over the summer of 2010, part-time support was provided to three African-American students to receive applied research training. The students were from diverse educational backgrounds, including a master's level student in social work (Mr. Eric Eghan), a doctoral student in applied developmental psychology (Ms. Sherrell Hicklen), and an undergraduate student in psychology (Ms. Shakoya Pope). These students coded and entered criminal record information, conducted research interviews as part of the PYS follow up, collected genetic material, and helped to locate hard-to-find participants. Dr. Pardini provided the students with weekly applied training sessions on manuscript preparation and the use of statistical methods to answer substantive research questions. The students also became familiar with contemporary research investigating racial disparities in violence and related social problems.

Minority Research Fellowships Indirectly Funded by this Consortium:

It should be noted that the next two students mentioned in this report have not directly received funding from this Consortium; however, they have engaged in training and research utilizing the Consortium infrastructure, faculty time, data, and effort to deliver outcomes that are relevant for the Pittsburgh Youth Study and the functional imagining work.

Minority Researcher Fellowships

During the 2010-2011 academic year, Ms. Sherrell Hicklen completed a two-semester long (20 hours/week) research fellowship with the consortium. The fellowship was supported by the doctoral program in applied development psychology at the University of Pittsburgh. Ms. Hicklen assisted with several aspects of the general follow up of the PYS, including collecting and coding criminal record information and performing structured research interviews. She also assisted with recruiting and screening normal control children for the SNAP fMRI study.

During the 2010-2011 academic year, Ms. Jessica Vasquez completed a post baccalaureate fellowship as part of a program for minority scholars supported by the School of Arts and Sciences at the University of Pittsburgh. Ms. Vasquez assisted with locating PYS participants, entered criminal record information, and helped recruit and screen normal control children for the SNAP fMRI study. In addition, Ms. Vasquez worked with Dr. Pardini on a research project examining factors that influence changes in academic achievement during the transition from elementary to middle school using the PYS dataset. At the end of the academic school year, the findings from this project were presented at a poster session organized by the School of Arts and Sciences at the University of Pittsburgh.

Minority Researcher Student Employees

Mr. Lamar Hill continues to work as a part-time senior research associate, assisting with the follow up of the PYS while completing his doctorate in counseling psychology at Carlow University. Mr. Hill has developed expertise in locating hard-to-find research participants and conducting research interviews in the field. He plans to use the PYS dataset to explore issues related to drug dealing in African-American men for his dissertation project.

Ms. Jessica Lopez is a Hispanic undergraduate student in the psychology department of the University of Pittsburgh. During the 2010-2011 academic year, she worked as a part-time student employee with the consortium. As part of her duties, Ms. Lopez helped to locate and schedule men from the PYS for research interviews. She also assisted with entering criminal record information. She plans to continue working with the consortium during the 2011-2012 academic year.

Mr. Isaiah Johnson is an African-American undergraduate student enrolled as a business and finance major at the University of Pittsburgh. During the 2010-2011 academic year, he was employed as a part-time student worker for the consortium. He was involved in data entry, data cleaning, and filing. His position came to an end at the end of the spring academic session at the University.

Ms. Amber Farr was employed as a community liaison research assistant working with the SNAP child treatment study while enrolled in a master's program in communications at Point Park University in Pittsburgh. She was involved in forming and maintaining relationships with community providers and other potential referral sources, attending meetings and other community activities, developing flyers, brochures, and other advertisements designed to increase recruitment into the SNAP treatment study. In August 2010, Ms. Farr stopped working with the Consortium because recruitment for the SNAP study was nearing completion and she obtained another position in marketing and communications.

Minority Student Thesis/Dissertation Projects

After completing her thesis and dissertation using the PYS data, Dr. Porche Wynn graduated from the University of Tennessee in 2010. Over the course of the past year, she has worked with Dr. Pardini to revise her thesis for publication in a peer-reviewed journal. The manuscript was recently accepted for publication in the *Journal of Race and Social Problems*.

Key Training Program Accomplishments

The minority training program has produced several notable accomplishments this grant year. Specifically, Ms. Jessica Vasquez successfully matriculated into a doctoral program in the School Psychology at the University of South Florida. In addition, Ms. Sherrell Hicklen was accepted into a doctoral program in human development and family studies at Michigan State University. Ms. Hicklen felt that this program was a better fit for her research interests than the doctoral program she was enrolled in at the University of Pittsburgh. Two empirical papers (referenced below) were also accepted for publication by individuals involved in the training program (i.e., Drs. William Elliott and Porche Wynn). Dr. Wynn also graduated with a PhD in counseling psychology and is currently employed as a children and youth clinical counselor at the Helen Ross McNabb Center in Knoxville, Tennessee. She is currently interviewing for faculty positions.

Elliott, W., Grinstein-Weiss, M., Kim, K. H., & Pardini, D. (in press). Predictors of variability within academic achievement trajectories among Black and Non-Black boys. *Urban Education*.

Wynn, P. T., Fite, P. J., & Pardini, D. A. (in press). Childhood predictors of the transition into early adulthood among African-American and Caucasian males. *Race and Social Problems*.