



August 29, 2016

Under the Freedom of Information Act, agencies are required to proactively disclose frequently requested records. Often the National Endowment for the Arts receives requests for examples of funded proposals, particularly those submitted to the *Research: Art Works* grant program. In response, the NEA is updating our original proactive disclosure from 2013 to include additional examples of the “Details of the Project Narrative” for research projects that received NEA funding.

The following seven narratives have been selected as examples because they represent a diversity of project types and are well written. Although each project was funded by the NEA, please note that nothing should be inferred about the ranking of each application within its respective applicant pool. In addition, keep in mind that the guidelines for the Research: Art Works grant program may vary from year to year, so some components that were required in one year may not have been required in other years.

1. Fordham University

To support a study of the impact of arts programming on the social skills and mental health outcomes of at-risk youth. Data will be examined from two Florida programs that served youth who either had been arrested or had received multiple suspensions from school. By comparing outcomes in youth who participated in arts programs with outcomes in youth who did not, this project will help to fulfill a critical knowledge gap that may have consequences for youth intervention programs and greater public policy concerning at-risk populations. (*Funded FY 2012*)

2. George Mason University

To support a randomized, waitlist-controlled trial examining the effects of visual arts, music, and dance therapy on the emotional and cognitive functioning of older adults. The study will occur in a long-term care facility housing low-income, older adults from diverse racial and ethnic backgrounds. Trained facilitators will engage older adults in a music, imagery, and movement (MiM) intervention, or, alternatively, in social group interaction. The study will include surveys and observational and clinical assessments, focus groups, and structured interviews, along with pre- and post-therapy measurements. (*Funded FY 2014*)

3. Georgia Tech Research Corporation

To support a two-phase study investigating: (1) the value of time spent by Americans on arts-related activities, and (2) an analysis of the impacts of arts districts on neighborhood characteristics. The first phase of the study will examine activities such as the costs of traveling to and from arts events, based on data from the U.S. Department of Labor's American Time Use Survey (ATUS) and the U.S. Census Bureau's Current Population Survey (CPS). A second phase of the study will use a proprietary data set to analyze the relationship between arts district clustering and the economic value and socioeconomic characteristics of U.S. neighborhoods. (*Funded FY 2012*)

4. University of Illinois at Chicago

To support a study to examine the impact of arts exposure and artistic expression on U.S. civil society, including civic engagement and social tolerance. Using behavioral data collected from the General Social Survey – a nationally representative sample of U.S. households – the study will use multivariate analysis to test hypotheses about the impact of arts exposure on civil society and the impact of artistic expression on individual manifestations of civil society. The study could result in greater public awareness of the arts on individual-level contributions to society. (*Funded FY 2012*)

5. University of Maryland at College Park

To support analysis of the cognitive, behavioral, and social outcomes of adolescents who study the arts in comparison with teenagers who do not. Analysis will be conducted with data from the National Longitudinal Study of Adolescent Health, a multi-year study of American adolescents that tracked participants through adolescence to early adulthood. The arts and non-arts students will be compared in terms of their school engagement, psychological adjustment, delinquency, involvement in risky behaviors, and substance use during adolescence. This study aims to determine whether arts instruction can, as has been previously suggested, help adolescents to navigate the challenges of daily life and to achieve more positive near-term and long-term developmental outcomes. (*Funded FY 2012*)

6. **University of Texas at Arlington**

To support a cross-sectional analysis of thirty U.S. cities over three decades to identify neighborhood attributes driving location preferences for artists and artistic businesses. The use of multivariate time-series data and geospatial mapping will enable statistical methods to test a causal relationship between the presence of arts and neighborhood development. The results could contribute to the development and refinement of social and economic policies that promote positive neighborhood change. (*Funded FY 2012*)

We hope that you will find these records useful as examples of well written narratives. However, please keep in mind that because each project is unique, these narratives should be used as references, rather than templates. If you are preparing your own application and have any questions, please contact the appropriate program office.

Attachment 2: Details of the Project Narrative

a) Research Questions

The dominant means to ‘inoculate’ youth against poor life outcomes include recreational activities, sports, and afterschool academics. These activities only occasionally integrate artistic content into their programming. However, there has been a growing awareness of the potential value of culturally relevant art as a means to effectively serve youth by building skills that research has shown to be associated with positive outcomes.

The promise of art intervention has appeared in the research literature for over a decade now. A series of studies by RAND in the late 1990’s showed positive changes in pro-social behaviors of youth who participated in arts programs (MacArthur & Law, 1996; Stone, Bikson, Moini, & McArthur, 1998; Stone, McArthur, Law, & Moini, 1997). The Youth Arts Project, a project jointly funded by the Americans for the Arts and local arts councils, added to the findings with hints of positive outcomes for participating youth (Clawson & Coolbaugh, 2001).

Concurrent with program evaluations were research projects that looked at more specific relationships between involvement in the arts and youth development. This included cognitive abilities in general (Melnick, Witner, & Strickland, 2011) and emotional responses (Choi, Lee, & Lim, 2008) specifically. A compendium funded by the National Endowment of the Arts and the U.S. Department of Education, *Critical Links*, reviewed the research and concluded that promising findings have been demonstrated, but stronger research designs are required in order to ascertain the impact of arts programming on individuals (Deasy, 2002; Catterall, 2002).

One of the more rigorous set of studies was conducted through McGill University. Five sites in Canada were established to operate the programming, while research was conducted that utilized a propensity matching scheme to compare outcomes of the participating youth with non-participants. Those findings also showed promising and positive relationships between arts involvement and pro-social outcomes (Wright, Lindsay, Ellenbogoen, Offord, Duki, & Rowe, 2005; Wright, Lindsay, Allaggia, & Sheel, 2006; Lindsay, Wright, Rowe, & Duku, 2009).

One of the more recent program evaluations was of the Prodigy program that utilized arts programming as both an intervention program for arrested youth and a prevention program for families and friends for the arrested youth. A series of articles showed positive changes in mental health (Rapp-Paglicci, Stewart, & Rowe, 2009; Rapp-Paglicci, Stewart, & Rowe, 2011) as well as in skills associated with positive youth outcomes, such as problem solving skills. This was across ethnicities (Rapp-Paglicci, Stewart, Rowe, & Miller, 2011) and rural locations (Stewart, Rapp-Paglicci, & Rowe, 2009) and neighborhood factors (Stewart, Rapp-Paglicci, & Rowe, 2011).

Despite these studies there are limits to the research and any conclusions that can be drawn, and Catterall’s conclusion (2002) about the need for stronger research designs still stands. The research design of most of these studies did not use comparison groups that did not receive the intervention. The pre-post design of these studies demonstrated improvements but has not demonstrated whether those improvements may have occurred without the programming. The gains could be due to a number of external factors, especially as it regards youth. This could include maturation and/or school activities.

It is only with analyses based on stronger research designs that the research can move forward. This proposal is to advance the knowledge base, both empirical and theoretical, about the near term and longer term impact of art programming relative to no programming. It addresses the question of what students learn while participating in the art program and examines the relationship of cultural art-based programming to near-term outcomes in mental health, social, and self-regulation skills.

The data sets to be utilized were collected through multiple waves of research of the Prodigy Youth Arts Program (Prodigy) and its school-based version, called the Positive Alternative to School Suspension (PASS). Funded by the Florida Department of Juvenile Justice, the programs served youth who had either been arrested or were considered at-risk youth due to school suspensions or living in a high crime, low-income community.

The program has shown great promise. The Florida State Department of Juvenile Justice independently identified the program as having among the lowest recidivism rate in the state (Florida Department of Juvenile Justice, no date). Calculated from the tables provided in the report, the Prodigy recidivism rate (8%) was significantly lower

than the state average of 15%. Internal reviews by members of the Prodigy research and management team show that the rate appears to be one of the lowest in the country also.

In addition, internal reviews by the Prodigy research and management staff, indicates Prodigy costs substantially less than do other diversion programs. Savings averaged minimally 20% over other programming targeted to a similar population.

These findings have generated significant enthusiasm for the program and calls for more in-depth analyses. However, due to funder restrictions on the program, Prodigy could not be structured in a manner to allow for a comparison group, as those referred to the program had to receive services immediately. The PASS program was created in a manner that did allow for a comparison group through a wait-list design. Preliminary analysis showed the PASS programming participants, at the group level, were similar to one another. Relative to the Prodigy participants, they skewed more female and African American. However, these differences can be managed through the matching as described in the data analysis section. Unfortunately, funding for this research ended in the current fiscal year putting a halt to more in-depth analysis of these data sets.

One of the primary research questions to be addressed by this proposal, identified as Hypothesis 1, concerns the effectiveness of art programming at the programmatic level.

Hypothesis 1: Youth who have participated in the art intervention programming will show significant positive changes in mental health and social skills relative to youth who have not participated in art intervention programming.

The first hypothesis addressing the question of art programming, generally, when data are collapsed across teachers and settings. This is a question that has limited research and one that is required to be considered for listing as an evidence-based program (OJJDP, 2009). If positive, it makes the utilization of art programming as a means to impact youth development more viable and acceptable to government agencies and funders. It has potential impact at both the scientific levels and the policy making levels.

In order to more fully understand who may benefit most from art programming, additional analyses will be conducted that will analyze differences in outcomes based on individual characteristics of the participants. The research questions on these analyses ask whether individual characteristics are related to any improvement in mental health symptoms and social skills. These characteristics include demographic variables, such as age, gender, race, and ethnicity.

In addition, additional analyses will seek to identify, in the context of youth intervention programming, mental health variables and social skills that may be more susceptible to improvement and those mental health variables and social skills that are more impervious to change through the art programming. Empathy and communications, for instance, may be social skills more likely to see positive improvement, while engagement and responsibility may be less so. In the mental health domain, anxiety and depression may be more likely to show positive changes while suicide ideation or hallucinations may be more resistant.

These specific research questions for these analyses are:

2. Do demographic characteristics influence the outcomes produced in the Prodigy/PASS art programming?
3. What mental health variables and social skills are more likely to be positively influenced by the art programming and which ones are less likely?

b) Research Design

The Prodigy and the PASS program had similar designs in the data collection. For both programs, a trained data collector met with the participants and the parent(s) to discuss the project and answer any questions about participation. At that stage, informed consents were collected and both parent and child were administered separate assessments. At the conclusion of the program, eight weeks later, parent and child were administered the same assessments in order to gather the post data.

For the Prodigy program, no comparison group was allowed due to funder restrictions requiring the provision of services to all who were referred or enrolled. The PASS program was established to allow for a comparison group. A wait list was created with those who were referred to the PASS program after the treatment group had reached capacity or the program had begun. This created a comparison group. Pre-tests occurred at time of registration and post-tests occurred prior to the start of the participation in the treatment group. In order to assure the waiting time was about eight weeks from entering the waitlist, enrollment for the subsequent cohort was stopped after a designated time. There was also a planned lag of 1-3 weeks between the start of the subsequent treatment groups. The assessments were conducted using self-created *Scantron* forms (with permissions), which allowed for minimization of data entry errors.

c) Data Sources

The sample for the PASS program was middle school students who have previously been suspended two times or more in the prior and/or current school year. The n of the treatment group was 45 with 64% male and 62% African-American. The comparison group of 37 was 65% male and 84% African American. The mean age in both groups was 13 years.

There were several waves of data collection for the Prodigy program. One dataset on the Prodigy program has an n of 140 adolescents. Gender was fairly evenly distributed in the sample with 53% boys and 47% girls. Ages ranged from 8 to 18 years old with a mean of 16 years of age. This sample was skewed towards late adolescence with 67% of the sample between 13 and 17 years old. The ethnicity was largely African American (38%) and Caucasian (32%), with Hispanic (14%) reported as the next largest category. The sample was mostly comprised of youths adjudicated by the State Juvenile System with 77% in that category. The assessments utilized included assessments commonly utilized for youth prevention and intervention research.

A second dataset has an n of 306 with the demographics being similar to the dataset described above, with 54% male; 41% African American, 16% Latino, and 34% Caucasian.

Standardized measures were used that assessed intervention and comparison groups, pre and post, on mental health, risk behavior, social skills, and self-regulation skills. These include the following measures:

Child Behavior Checklist (CBCL) and Youth Self-Report (YSR): The CBCL/6-18 has 118 items that describe specific behavioral and emotional problems in youth, plus two open-ended items for reporting additional problems. For quality control, parents rate children's responses on the accuracy of multiple items regarding current and recent behaviors and activities. The YSR is completed by youth (i.e., self-report) and the CBCL, known for strong reliability and validity, is used to detect and assess mental health difficulties (Achenbach, 1991).

Academic Performance: Prodigy participant specific data, cleansed of identifiers, were obtained from relevant school districts and included: grade level, number of days of in-school suspension, number of days in out-of-school suspension, reduced lunch participation, yearly grade point average (GPA), grades in math, science and reading courses by quarter, number of reported incidents (drugs/alcohol, disruptive behavior, crimes), total number of days enrolled by quarter, excused absences by quarter, and unexcused absences by quarter.

Family Functioning: The Family Assessment Device (FAD), based on the McMaster Model of family functioning, assesses familial structural, organizational properties, and the patterns of transactions among family members (Epstein, Baldwin, & Bishop, 1983). The scale measures six dimensions of family functioning: Problem Solving (PS), Communication (C), Roles (R), Affective Responsiveness (AR), Affective Involvement (AI), Behavior Control (BC).

Behavior Dysregulation Scale (BDS): The BDS is a 92-item measure that measures Dysregulation on three dimensions: Affective Dysregulation (28 items), Behavior Dysregulation (36 items), and Cognitive Dysregulation (28 items). Psychometric analyses, including Confirmatory Factor Analysis and Item Response Theory were conducted to demonstrate both reliability and validity of the measure. Results indicate psychometric soundness through examination of four samples (Mezzich, Tarter, Giancola, & Kirisci, 1991).

The Social Skills Improvement System (SSIS) (Gresham & Elliott, 2008) is a revision of the widely used Social Skills Rating System. This assessment was used to measure the pre-intervention – post-intervention changes in social skills. Subscales include communication, cooperation, assertion, responsibility, empathy, engagement, and self-control. Internal reliability ranges for .72 for the Assertion subscale to .94 for the Communication subscale. Validity has been demonstrated in normal and special needs populations.

Aggression Questionnaire is a revised version of the Buss-Durkee Hostility Inventory (Buss & Warren 2000) and measures aggression and anger. It has an overall score and five scales: physical aggression, verbal aggression, anger, hostility, and indirect aggression. The scales have an alpha of .70 or higher and the overall scale has an alpha of .90. It has been in wide use as a measure for youth.

Social Problem Solving Inventory (Frauenknecht, M & Black, D., 2005) is a widely used scale measure that assesses automatic process, problem orientation and problem solving skills. Orientation has three subscales: cognitive, emotional, and behavioral. Problem solving skills have subscales for Problem Identification, Alternative Generation, Consequence Prediction, and Implementation/Evaluation/Reorganization. The reliability is over .93 for the entire scale.

The independent variable was an arts program that utilized instruction in either the performing or visual arts. This former included dance, music, Capoeira, or theater. The latter included painting, drawing, collaging, or clay modeling.

The program was an eight week program conducted after school either at a community agency or at a middle school campus. The youth who participated had received two or more suspensions within the prior and/or current school year; and/or been arrested; and/or lived in a neighborhood with high incidence of arrests and crime.

d) Data Analyses

The analyses plan entails the use of a Repeated Measures MANOVA (RM MANOVA), where time (pre/post) and condition (experimental/control) are compared for differences in the dependent measures. This approach produces a general main effect for time (pre versus post scores) independent of experimental condition. The experimental condition effect is similar to an interaction effect in the univariate ANOVA model where we can evaluate if differences between times were influenced by membership in either condition (experimental or control).

RM MANOVA, as opposed to a series of RM ANOVAs, is used to avoid having to implement the Bonferroni adjustment, which would require the alpha ($p < .05$) to be divided by the number of analyses. In this case, $.05 / 5$ different measures = alpha level of .01. Multivariate analyses are used to reduce our risk of committing a Type II error.

Groups will be matched on the dependent measures and any other key demographic variables, including, gender, race, and school level (middle or high school), to be certain the two groups start as equivalent as possible. Matching will reduce the internal threat of regression towards the mean as well reduce the risk of a selection bias. That is, the experimental and the comparison groups are more likely to be equivalent.

Prior to running the RM MANOVA the data will be analyzed using Box's Test of Equality of Covariance Matrices. This will determine if the covariance matrices of the dependent variables are significantly different, a violation of one of the assumptions of the MANOVA model. A non-significant Box's statistic reflects the covariances are not significantly different. Wilks' lambda will be the test for multivariate significance.

If Box's test is significant, following the guidance of Tabachnick and Fidell (2001) cell sample sizes and variance/covariance sizes will be examined. If groups with larger sample sizes are responsible for the larger variances/covariances then the analysis can continue as planned. If this is not the case several methods can be used to address the possibility of a Type I error, including increasing, randomly deletion of cases to equalize sample sizes and/or use Pillai's criterion for testing multivariate significance or shift to a series of RM ANOVAs and utilize $p < .01$ as the alpha-level (see above).

Pre-post analyses will compare various measures of mental health and social skills to evaluate if participation in the arts programming resulted in positive outcomes (i.e., decreased anxiety or increased responsibility). For this level of analyses, a larger data set will be utilized. A within-group analysis will be conducted, which is relatively resilient to any individual differences effects – a common confounding issue facing between-groups analysis. As this second analyses is exploratory in nature, it will serve as the foundation for future model building involving more sophisticated multivariate analyses (i.e., structural equation modeling). As the variables had been selected for the pre-post assessments based on prior research, any that are found in this analyses to produce a positive change in outcomes will be considered for inclusion in the model.

e) Personnel capability

PI, Dr. Tina Maschi, is a social work researcher, practitioner, and professional musician. She is an Assistant Professor at the Fordham University Graduate School of Social Service. Her extensive research and publication record includes the use of creative arts intervention for mental and social well-being. Dr. Maschi has coordinated intramural and extramural grant-funded research projects and fellowships from government and private foundation sources. She is the 2010 recipient of the competitive Hartford Geriatric Social Work Faculty Scholars Program Award, which is funded by the Hartford Foundation and the Gerontological Society of America (GSA). This research project examined the role of coping resources (e.g., such as the use of the arts activities and social coping) among state prisoners. She is well published, including in the use of arts as an intervention strategy for mental and social well-being. For the proposed NEA project, Dr. Maschi will provide 10% of her time for project management, overseeing contract compliance, and contributing to and coordinating the team effort for report writing and dissemination of the project findings.

Co-PI, Dr. Jerry Miller, is an Industrial-Organizational Psychologist, based at the Community Research Center, Inc., with extensive expertise in managing grant projects from government and private foundations. He has managed large complex multi-year projects including field-based research projects. He has a strong background in working with school systems and in youth programming. He directed the Prodigy program for the University of South Florida, on which the PASS program was based. He has also conducted several analyses on the program. Dr. Miller has published in both professional and peer review journals and has been invited to present his work internationally. He will be on the project 10% time overseeing the work plan, assisting the PI will project management and, due to his experience with arts based programming, he will have responsibility for the management of the datasets, data analyses, and writing of reports and publications as needed.

Co-PI, Dr. William Rowe, is a Professor in the School of Social Work at the University of South Florida. He holds appointments in the College of Public Health, the Aids Education and Training Center, and the Moffitt Cancer Center. He is formerly Director and Professor of the Schools of Social Work at the University of South Florida, McGill University and Memorial University and was originally tenured at the University of Western Ontario. Dr. Rowe has served on numerous national and international boards and committees in both the academic and practice arenas. Dr. Rowe has been instrumental in the development of social work education programs in Mexico, the Middle East, the Persian Gulf, and Indonesia. He remains an active researcher.

Dr. Rowe was Principal Investigator on two large scale arts intervention programs. During his 30 years as a social work educator Dr. Rowe has edited and authored more than 150 scholarly and professional books, articles, monographs, and research papers on a variety of topics. He serves on the editorial board of a number of academic and professional journals, including the Journal of Evidence-Based Social Work, and is co-editor of Best Practices in Mental Health: an International Journal.

Dr. Rowe will provide the datasets to be analyzed and be available, as needed, for consultation throughout the project period. He will receive no remuneration for his contribution to the project.

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Consultant, Keith Morgen, Ph.D., LPC, NCC, is an Assistant Professor of Psychology at Centenary College and teaches in the undergraduate Psychology and graduate Counseling Psychology programs. Dr. Morgen is a Licensed Professional Counselor (LPC) in New Jersey and a National Certified Counselor (NCC). He received his Ph.D. in Counseling Psychology from Lehigh University. He was a Pre-doctoral and Post-doctoral Fellow in the Behavioral Sciences Training in Drug Abuse Research Program, which was funded by the National Institute on Drug Abuse (NIDA) and jointly sponsored by the Medical and Health Research Association of New York City, Inc. (MHRA), and the National Development and Research Institutes, Inc. (NDRI). Dr. Morgen has served as a research methodologist and statistician on two NIDA grants and has offered consultative research services to numerous other social science projects. Dr. Morgen has over 25 publications on addiction and trauma issues. In addition, Dr. Morgen has presented at numerous major conferences, such as the American Counseling Association, American Public Health Association, Eastern Psychological Association, and the College on Problems of Drug Dependence. Dr. Morgen has been awarded a Psi Chi Faculty Advisor Research Grant for his work on addiction and trauma within New Jersey parolees. Dr. Morgen will utilize his expertise as the main data analyst for this project and will devote up to four days of his time.

f) Organizational capacity

Founded in 1841, Fordham is the Jesuit University of New York, offering exceptional education distinguished by the Jesuit tradition to more than 15,100 students in its four undergraduate colleges and its six graduate and professional schools. It has residential campuses in the Bronx and Manhattan, a campus in West Harrison, N.Y., the Louis Calder Center Biological Field Station in Armonk, N.Y., and the London Centre at Heythrop College in the United Kingdom.

A research university, Fordham received \$43 million of multi-year external funding (both new and continuing awards) in fiscal year 2011; this is an 8.5% increase from the previous fiscal year. The University's Office of Sponsored Programs and the Controller's Office oversee the contractual and financial aspects of all grants and contracts throughout the University. Fordham University will oversee all fiscal matters and general grantor conditions related to this project. The financial analyst will monitor grant expenditures and prepare financial reports and budget modifications.

The Fordham University Graduate School of Social Service (GSSS) is one of the nation's oldest schools of social work and has been a fully accredited professional school since 1929. GSSS is ranked among the top twenty graduate schools of social work in the nation and it currently is the nation's largest. All faculty and staff at GSSS have offices equipped with up-to-date computers, printers and furniture, and all necessary supplies and software and computer support for conducting research. Support staff is available, including a dedicated Grants Officer who will assist in the management of this grant.

Fordham University's division of Information Technology (IT) is committed to creating an environment with easy access to the information technology resources and information needed, and to provide an information technology infrastructure that supports Fordham's institutional goals. Wireless technology, a state-of-the-art Electronic Information Center, quality and integrity of information security, Faculty Resource Centers, Smart Classrooms, video conferencing throughout the university and technological expertise are all hallmarks of Fordham University's Information Technology division.

Fordham's virtual network, available 24 hours a day via the Internet, provides multiple redundant access paths to the Internet and a host of other electronic resources. In addition, Enterprise Technology Services (ETS) within IT is committed to the application of "best practices" in the establishment of highly responsive and available computing platforms as well as a stable and reliable network infrastructure for Fordham University.

Partners

The University of South Florida will provide access to the data sets collected during the PASS program. They will provide research guidance through the Co-PI, Dr. William Rowe.

The Community Research Center, Inc. (CRCI) is an independent organization that will be responsible for managing the datasets, conducting some of the data analyses, jointly overseeing the project with Fordham University, and participating in the analysis and write up of reports and potential peer-reviewed articles. CRCI will provide space, a computer and software for writing, website support for communicating any findings, and SPSS for analysis.

g) Outline for Research Report

As required, there will be a 30-50 page report following the format that is currently outlined. However, if a different format is approved by NEA, we will modify the format to accommodate that guidance.

The report will provide the following information:

- An executive summary that will provide a summary of the findings of the research conducted. This will clearly report on the most relevant analyses.
- A summary of the analysis conducted, and related findings. This section provides greater detail about the research, including some of the background, the data collected, the reliability and validity of the assessments, the methods, and the results.
- A conclusions section, including research and/or policy recommendations, based on the findings. Included in the section will be recommendations for the next research steps.
- A technical note or summary of the methodology used will provide specific information, as needed, so the analyses can be replicated.
- If applicable, web links to research that resulted from this project. This section will also report on any presentations on the research.

h) Outcome(s) and Measurements

As one of the few studies that have utilized a comparison group, the analyses will provide one of the most robust studies to date on the impact of art programming. It will identify the impact on the individual's social skills and clinical characteristics. Assuming the hypothesized relationships are found, this creates a more substantive body of evidence than currently exists. The value of this is to both the scientific and the policy making community.

From the research perspective, a broad fundamental question concerning the potential of art programming would have been directly addressed. If the hypothesis holds up, it could be stated that art programming as implemented in the Prodigy/PASS programs is significantly better than no programming.

This will have near-term practical value that may have a significant impact practices in youth intervention programming. Support for the hypothesis will likely provide the final research piece that will allow designation as an evidence-based program once it is documented. Coupled with the prior published research, there will be sufficient documentation to support the program being listed in the evidence-based catalogue created by organizations such as OJJDP. As evidence based is now a requirement for many agencies, once that designation is achieved, there would be greater willingness among agencies and other funders, to provide programming and fiscal support for such programming. This would result in expanding the reach of the arts to youth.

The analyses also will identify the mental health variables and social skills that are more likely to be influenced by the programming. This will form an empirical scaffold that may guide the development of theory about the relationships between various types of art programming and differential impacts. It can be utilized to guide further research directing systematic exploration of this field. This is an important component in creating a guide in the use of arts as a youth development process.

Together, these analyses will significantly increase the understanding of the value of art as a practical means to develop art intervention programming. Coupled with the information we have gathered about the relatively low costs of this program compared to more traditional programs, the interest that has been expressed at conferences by agencies about the program, can be turned to real support for such programming.

The findings will be submitted to a peer review publication as well as disseminated through conference presentations. In addition, articles will be submitted to professional (non-academic) journals in order to more widely disseminate the findings.

i) Schedule of Key Project Dates

Month 1 -2 Setup of data files, onboarding of personnel, meetings to coordinate writing and analysis

Month 2-8 Data analysis and article writing

Month 9-12 Prepare presentations, final report and begin dissemination

j) Plans for Reporting and Dissemination

Along with the final report the PI and Co-PI's will produce at least two articles on the data and the analyses for peer-reviewed publications. In addition, at least one article each will be prepared for a trade or professional magazine that is distributed to those in the art community and the juvenile justice communities.

The PI and Co-PIs regularly present their work at conferences, both scientific and professional. These findings will be incorporated into some of these presentations. Potential conferences include the OJJDP Conference (if held), Society for Prevention Research, or the Academy of Criminal Justice Sciences Conference.

The final report will include both a 30-50 page complete version, as well as a separate Executive Summary to allow for distribution of the findings for those interested. A web page will be created by the Community Research Center with the Executive Summary posted.

k) Plans for Making the Report and Data Accessible

As stated, the findings will be reported in various formats and journals. The report will be posted on a website for downloading. As additional analysis beyond those described in this proposal may be conducted, the data will be available through Dr. Rowe on a case by case basis. Researchers will contact him to request access to the data.

l) References

- Buss, A., Warren, W, (2000). Aggression questionnaire. In *Mental Measurements Yearbook*, Buros Center for Testing, Buros Institute, 2010 accessed online **Accession Number:** 15122701
<http://web.ebscohost.com/ehost/detail?vid=8&hid=13&sid=ec254eff-f51d-444c-ba9f-e3c1a3f2b7a7%40sessionmgr11&bdata=JnNpdGU9ZWhvc3QtG12ZQ%3d%3d#db=loh&AN=15122701>
- Catterall, J. (2002). The Arts and the transfer of learning in Deasy, R. (ed.). *Critical links:* from
<http://www.aep-arts.org/resources/toolkits/ctitcallinks/criticallinks.pdf>
- Choi, A., Lee, M., & Lim, H. (2008). Effects of group music intervention on depression, anxiety, and relationships in psychiatric patients: A pilot study. *The Journal of Alternative and Complementary Medicine*, 14 5, 567-570.
- Clawson, H. J., & Coolbaugh, K. (2001). *The YouthARTS development project: Juvenile justice bulletin* (Publication No. NCJ 186668). Retrieved November 2004 from
http://www.ncjrs.org/html/ojjdp/2001_5_2/contents.Html
- Deasy, R. (Ed.). (2002). *Critical links: Learning in the arts and student academic and social development*. Retrieved November 2007 from <http://www.aep-arts.org/resources/toolkits/criticallinks/criticallinks.pdf>
- Florida Department of Juvenile Justice. (2010 est). *2007-2008 Comprehensive Accountability Report. Learning in the arts and student academic and social development*. Retrieved November
- Lindsay, J., Wrights, R., Rowe, W., & Duku, E. (2009). Effects of an after-school arts program on youths in low-income communities: A comparative study of Canadian and American Youths. *Best Practices in Mental Health, An International Journal*, 5, 1, 74 -88.
- McArthur, D., & Law, S. A. (1996). *The arts and pro-social impact study: A review of current programs and literature*. Santa Monica, CA: Rand Institute for Education and Training.
- Melnick, S. A., Witmer, J. T., & Strickland, M. (2011): Cognition and Student Learning through the Arts, *Arts Education Policy Review*, 112:3, 154-162.
- Office of Juvenile Justice and Delinquency Prevention (OJJDP) (No date), *Model Program Guide*. Nominate a program. Retrieved 11/6/2011 Website http://www.ojjdp.gov/mpg/mpg_nomination.aspx
- Rapp-Paglicci, L., Stewart, C., & Rowe, W. (2011): Can a self-regulation skills and cultural arts program promote positive outcomes in mental health symptoms and academic achievement for at-risk youth? *Journal of Social Service Research*, 37:3, 309-319.
- Rapp-Paglicci, L., Stewart, C., & Rowe, W. (2009). Evaluating the effects of the Prodigy Cultural Arts Program on symptoms of mental health disorders in at-risk and adjudicated youths. *Best Practices in Mental Health, An International Journal*, 5 (1), 65-73.
- Rapp-Paglicci, Stewart, Rowe, & Miller (2011). Addressing the Hispanic delinquency and mental health relationship through cultural arts programming: A research note from the Prodigy evaluation. *Journal of Contemporary Criminal Justice*, Vol. 27 No. 1, 110-121.
- Social Problem-Solving Inventory for Adolescents (SPSI-A): Development and preliminary psychometric evaluation. *Journal of Personality Assessment* PD- Jun95, Vol. 64 Issue 3, p52.
- Stewart, C., Rapp-Paglicci, L., & Rowe, W (2009). Evaluating the efficacy of the Prodigy prevention program across urban and rural locales. *Journal of Adolescent Social Work* 26, 65–75.

- Stewart, C., Rapp-Paglicci, L., & Rowe, W. (2011): The impact of neighborhood factors on mental health and academic outcomes for adolescents participating in the Prodigy program. *Journal of Human Behavior in the Social Environment*, 21:4, 383-397.
- Stone, A., Bikson, T., Moini, J., & McArthur, D. (1998). The arts and prosocial impact study: Program characteristics and pro-social effects (RAND DRU-1887-LADCA). Santa Monica, CA: Rand Institute on Education and Training.
- Stone, A., McArthur, D., Law, S. A., & Moini, J. (1997). *The arts and pro-social impact study: An examination of best practices*. (RAND DRU-1686-LADCA). Santa Monica, CA: Rand Institute on Education and Training.
- Wright, R., Lindsay, J., Allaggia, R., & Sheel, J. (2006). Community-based arts program for youth in low-income communities: A multi-method evaluation. *Child and Adolescent Social Work Journal*, 23, 635–652.
- Wright, R., Lindsay, J., Ellenbogen, S., Offord, D., Duki, E., & Rowe, W. (2005). Effect of a structured arts program on the psychosocial functioning of youth from low-income communities: Findings from a Canadian longitudinal study. *Journal of Early Adolescence*, 26, 186–205.

a) **Research Motivation**

Research Objective

To implement a community-based integrated music, imagery and movement intervention to improve mood and promote cognitive functioning in older adult residents living in a long-term care facility.

Study Aims

To examine the effects of a music, imagery, and movement (MiM) intervention on emotional and cognitive functioning in residents living in a community-based adult long-term care facility.

Hypothesis 1: Residents who participate in the MiM group will improve in **emotional** functioning, as compared to residents in the control group.

Hypothesis 2: Residents who participate in the MiM group will improve in **cognitive** functioning, as compared to residents in the control group.

Significance of the Problem

In 2000 there were an estimated 45 million Americans 60 and older. By 2005, the numbers increased to 48 million. Currently, the 2010 Census indicates that 18% of the population, or 55 million Americans, are aged 60 or older. Census projections estimate that by 2040, a quarter of the population will be aged 60 or older. As the United States population ages, health services research will increasingly be directed to this population's critical care needs, and will require culturally relevant and personalized interventions (Rosenthal Gelman, Tompkins, & Ihara, 2014). Within the 65 and older population there has been a rapid increase in dementia-related disease. Prince and colleagues estimate that approximately 35.6 million people lived with dementia across the world in 2010. These numbers are expected to double every 20 years through 2050. Currently, more than half of all people with dementia live in countries with low or moderate incomes and this trend is expected to continue (Prince et al., 2013). In 2010, the prevalence of dementia among individuals older than 70 years of age in the U.S. was estimated at 14.7% (Hurd, Martorell, Delavande, Mullen, & Langa, 2013). The most prominent type of dementia is Alzheimer's disease. Alzheimer's disease makes up 55 percent of the diagnosed cases of dementia. It is reported that 5 million people aged 65 and older have Alzheimer's disease in the U.S. and it is projected that up to 16 million people will have Alzheimer's disease in 2050 (Hebert, Weuve, Scherr, & Evans, 2013). In 2010, 130,000 Virginia residents suffered from Alzheimer's disease with a projected increase to 160,000 by 2025 (Alzheimer's Association, 2013).

Creative Arts and Aging. Engagement in creative arts activities, such as sculpting, drawing, painting, writing, music and movement, provides purpose, meaning and social connection for older adults living in long-term care facilities. Scholars discuss the importance of preserving autonomy, sense of control and meaning-making in older adult populations who transition to assisted living facilities (Ball, Perkins, Whittington, King, & Hollingsworth, 2005; Tompkins & Sorrell, 2008), and creative arts intervention offer a space where such self-directed decision-making, autonomy, and social engagement can take place in the context of supportive relationships. The arts provide alternative means of communication and self-expression, particularly when verbal communication patterns are limited. For example, Gregory (2011) designed a reminiscence-based poetry intervention where poets met with older adult residents with dementia and helped the older adults transform their conversations into poems. The

researchers found that this type of intervention helped preserve memories, facilitated communication with others, and humanized the dementia experience. Similarly, other studies have found creative expression paired with reminiscence decreases depression in community-dwelling older adults (Bohlmeijer, Valenkamp, Westerhof, Smit, & Cuijpers, 2005). A review of the arts and music in health care shows expressive arts therapies help to improve sleep, increase impulse control, increase concentration, and decrease depression and anxiety. Arts programs have been found to reduce length of hospital stay and decrease need for pain medication (Staricoff & Clift, 2011).

The literature suggests that expressive therapy interventions that are kinesthetic-sensory based, like music and movement techniques, are most effective for older adult populations when personalized/individualized, participatory, and socially interactive, allowing for maximum engagement of multiple areas of the brain (Sakamoto, Ando, & Tsutou, 2013), with studies showing such interventions may actually rewire cortical pathways in the brain leading to improved mood management (Malchiodi, 2012). Research on the neurocognitive mechanisms of emotional control suggest that interactions between the prefrontal cortex and subcortical regions are important for modulating behaviors associated with emotional reactivity (Matto, Strolin-Goltzman, Hadjiyane, VanMeter, Kost, Marshall, & Wiley, (2013); Ochsner & Gross, 2004). Thus, emotional regulation later in life, when cognitive control processes and the prefrontal cortical network may be in decline due to natural aging or disease, necessitates deployment of more efficient strategies and the recruitment of different control systems to support emotional regulation. Similar to language, music, art, and dance are symbolic systems that can be marshaled in the service of regulating emotion and behavior. When language, as a symbolic system, degrades in functioning, we can help residents expand their repertoire and accessibility to these other symbolic systems to promote emotional/behavioral regulation (Winsler, Ducenne, & Koury, 2011). For example, music in the form of song-as-instruction has been used with populations who have limited executive functioning skills (e.g., child populations) to direct and redirect behavioral (Kramer, 1980), and could also be an innovative instructional technique for residents living in long-term care facilities.

Music. Stuckey and Nobel's (2010) literature review of creative arts interventions found music engagement decreased anxiety, tension and pain, and increased immune system functioning in clinical populations. Their summary found that music used therapeutically in institutionalized settings such as hospitals increases patients' sense of control, reduces stress, and promotes wellness. For example, individualized piano instruction and jazz instruction have been shown to strengthen a range of cognitive abilities and improve balance in older adults (Alpert et al., 2009; Bugos, Perlstein, McCrae, Brophy, & Bedenbaugh, 2007). Chorale group participation has been shown to decrease falls (Cohen, Perlstein, Chapline, Kelly, Firth, & Simmens, 2006) and decrease medication use and improve general health in older adult populations, with outcomes maintained at 24-month follow-up (Cohen, Perlstein, Chapline, Kelly, Firth, & Simmens, 2007). Music has been successfully used with medical populations to help control pain, anxiety, overall distress, and medication use (Chlan et al., 2013; Hartling et al., 2013). A participatory music intervention for older adults with dementia helped increase resident behavioral engagement over time, as compared to a reading control group (Harrison, Cooke, Moyle, Shum, & Murfield, 2010). Thaut and colleagues (2009) employed a neurologic music therapy (NMT) intervention to

enhance cognitive functioning and emotional adjustment for patients with brain injuries, with results showing improved cognitive functioning and decreased depression and anxiety. Interactive and participatory music experiences that are derived from resident-specific musical selections and paired with clapping, singing, or active engagement improve emotional well-being and decrease stress in patients with dementia (Sakamoto et al., 2013). Other research shows that musical training can produce life-long benefits, preserving auditory neural precision that decreases the risk for subcortical auditory processing decline and, thus, stabilizing speech production despite natural aging (Parbery-Clark, Anderson, Hittner, & Kraus, 2012a). Specifically, lifelong musical experiences help balance excitatory and inhibitory subcortical neural networks and particularly strengthen inhibitory systems that are linked to speech-in-noise processing (Parbery-Clark, Anderson, Hittner, & Kraus, 2012b). Musical training has been associated with improved verbal memory, spatial skills, attention, and executive functioning (Bialystok & DePape, 2009; Ho, Cheung, & Chan, 2003).

Imagery and Visual Expression. Fraser and al Sayah (2011) reviewed the literature on the arts in health care settings, with studies focused on the visual arts (drawing and photography), poetry, and theater with results showing improvement in a range of physical and emotional functioning domains. Art and imagery experiences have been found to enhance attention, memory and concentration in populations with limited executive functioning capacity (Guetin et al., 2009). Kinney and Rentz (2005) found drawing and painting increased well-being, particularly reducing sadness, among adults with dementia in a day center, as compared to a social control routine activities group. Improvement in cognitive functioning has been found in adult populations with Alzheimer's disease after participating in structured art therapy activities (Alders & Levine-Madori, 2010; Levine-Madori, 2009). And, modeling clay has been used successfully to reduce depression in people with Parkinson's diseases (Elkis-Abuhoff, Goldblatt, Gaydos, & Coratto, 2008). Other studies have shown guided imagery techniques decrease the use of pain medications in hospital populations and visual arts activities enhance short-term emotional well-being in family caregivers of hospitalized patients, improving communication and decreasing stress and anxiety (Walsh, Martin & Schmidt, 2004). The evidence-based Timeslips intervention for residents with Alzheimer's disease uses pictures to help residents generate verbal responses that are aggregated into a group-generated story, and has been shown to increase engagement, alertness and social interaction (Fritsch, et al., 2009).

Movement. Ideas, thoughts, and feelings can be expressed symbolically through movement. Nonverbal expression through physical movement has been found to decrease stress and increase quality of life including cognitive functioning and physical symptoms, specifically improving ambulation in clinical populations (Stuckey & Nobel, 2010). Kluge et al. (2012) found that older adult women who danced or engaged in dance movement therapy five times per week experienced decreased stress associated with moving into a retirement community by enhancing social engagement and personal well-being (ages 78-92). Adults with Parkinson's disease improved in balance and stability after participating in a 12-week ballet intervention (Houston & McGill, 2013).

Previous research suggests that integrated arts modalities, such as music, visual imagery and expression, and movement offer diverse ways of stimulating and improving cognitive and emotional functioning in a variety of older adult populations. Such findings are of significance to

a variety of stakeholders, most importantly to older adult residents of long-term care facilities who may benefit from the implementation of creative arts programming, and to the families and caregivers who are involved in resident treatment planning. The proposed study is of current priority to multiple federal partners as recognized by the Federal Interagency Task Force on Arts and Human Development that is a collaboration among the National Endowment for the Arts, National Institute on Aging, Office of Behavioral and Social Sciences Research, and the National Center for Complementary and Alternative Medicine, which has a commitment to furthering the science behind arts programming for older adult populations with cognitive decline.

The broad aim of our study is to enhance the full participation of older adult residents in a long-term care facility through their participation in a creative arts intervention that is hypothesized to improve emotional and cognitive functioning. Our study responds to several methodological gaps in the current arts in aging literature. Important methodological limitations across extant studies include lack of control groups, use of small homogenous samples with limited population diversity, and only vague descriptions of the creative arts interventions (Castora-Binkely, Noelker, Prohaska, & Satariano, 2010). Our study responds to these methodological gaps via our partnership with Birmingham Green, a long-term care facility that serves a racially/ethnically diverse, severely low-income population of residents who have a range of cognitive abilities. Methodologically our study extends the literature in several important ways: 1) we have access to a total population of ~315 residents with a range of cognitive ability; 2) our design uses a matched wait-list social control group and randomization to treatment and control conditions; 3) the creative arts intervention integrates multiple creative arts modalities and is based on a widely recognized empirically-based intervention, the Timeslips model, that has been effectively implemented with similar populations; 4) our creative arts intervention is sufficiently detailed and employs treatment fidelity measures to account for implementation accuracy.

MiM Intervention. Based on the previously presented current scientific understanding of best practice in the application of creative arts interventions with older adults residing in long-term care facilities, our MiM intervention will be individualized, participatory, and socially interactive, conducted in a group setting. Novel to other current interventions, our MiM model integrates three creative arts modalities – music, imagery and visual expression, and movement – and is adapted from the evidence-based Timeslips group storytelling protocol (Fritsch et al., 2009) that uses pictures to elicit a shared group narrative. Adapted from this Timeslips model, we will use music, imagery and movement as the creative arts intervention focus, conducted according to the following protocol: 1) Prior to participation in the treatment group, each of the 10 residents identify one piece of music that elicits positive emotions (**personalized music selection**); 2) **LISTENING TO MUSIC**: In each of the 10 sessions, the music selected from one resident is played, playing all resident selections over the course of 10 weeks (**listening to the music ~10 minutes of group time**); 3) **IMAGERY ACTIVATION**: After the piece is played, residents are guided through a mental imagery exercise, related to the music experience, that facilitates kinesthetic (body movements) and visual images associated with the experience, at which time clay, oil pastels, markers, colored pencils and white paper will be available for residents interested in visually depicting their images (**mental/visual imagery exercise, ~10 minutes**); 4) **BODY MOVEMENT**: Residents are encouraged to act out movements related to the music as it is played again (**moving to music; ~10 minutes**); 5) **SHARING EXPERIENCE WITH OTHERS**: Each resident verbally (if able) shares something about the experience

(**sharing/narrating; ~10 minutes**); 6) Finally, the facilitator aggregates the shared experiences into a group theme/story related to the music, imagery, movement, and narration experience (**“music, imagery and movement collage” that represents that group session**). Total group time ~50-60 minutes.

b) Research Design

Population and Setting. Birmingham Green is the non-profit partner for Northern Virginia area local governments providing a continuum of exceptional long-term care for older adults, particularly those with limited resources. Birmingham Green evolved as a cooperative venture of the following localities: Fairfax, Fauquier, Loudoun, Prince William and the City of Alexandria. The campus offers intermediate and skilled nursing care (180 bed capacity), and assisted living care (District Home and Willow Oaks, 64 beds and 92 beds respectively). The programs are developed to meet the long-term care needs of older adults with very low income. This study adds to the literature by delivering a creative arts intervention with a racially and ethnically diverse older adult population with very limited resources. The physical space and design of Birmingham Green is unique in encouraging artistic expression and creative engagement. There is a ceramic studio that sits separate from the main building on the resident grounds which functions as a resident art space. One resident, a professionally trained artist, paints murals on the fences in the outdoor spaces on the grounds, and on the walls of interior activity rooms. This resident has contributed to the design on the unit for persons with dementia, creating murals that look like library shelves with books, which helps to naturally deter residents from trying to leave through the doors. Anecdotally, resident paintings have not only served a broader community utilitarian purpose but, individually, this resident tends to reduce medication use when he is actively involved in his painting projects. As one program administrator noted, it’s amazing how “picking up the paint brushes can help in putting down the meds.”

Design. We will employ a Randomized Controlled Trial in a community-based setting, testing a music, imagery and movement intervention (MiM) with residents at Birmingham Green. We will implement a pre-post two-group treatment intervention design with randomization to treatment condition and wait-list social control group (MiM or control group) with 6 week follow-up for all participants. Residents will be included in the study if they have a cognitive functioning score between 24-30 on the MMSE. Residents will be excluded from study participation if there is the presence of a co-morbid mental health diagnosis or other physical or behavioral challenges that clinical staff assess as rendering the resident unable or unsafe to participate in the activity. Eligible residents will be randomly selected from the unit population of residents and randomly assigned to participate in the two activity conditions (MiM or control). Each treatment condition will be a closed group with 10 participants, and we anticipate running a total of three 10-week cohorts of 20 participants per cohort (10 participants in the MiM condition and 10 participants in the control condition for each cohort). We anticipate 30 residents per condition over the course of the three cohorts, for a total sample of 60.

All group facilitators will be blind to study aims and hypotheses. Manualized facilitator training protocols will be used for both the MiM and control group conditions. Training protocols include

two training sessions that instruct on the group session content, format, and implementation techniques through use of case examples and role play. All facilitators will complete a competency evaluation at the end of the training, requiring a score of 90% or better for selection as a study group facilitator. Group facilitators in both conditions will complete treatment fidelity checklists at the end of each group session to document implementation and adherence to their respective treatment protocols. In addition, all group facilitators will engage in weekly treatment condition-specific face-to-face supervision by a licensed clinician to ensure ongoing fidelity in group protocol implementation.

Design Summary

1. Music, Imagery & Movement (MiM) Treatment Intervention. Ten residents will meet two times per week for one hour per session over the course of ten weeks. This evidence-based participatory music, imagery and movement intervention is designed for older adults with cognitive decline.

2. Wait-list Social Control Group: Ten residents will meet two times per week for one hour per session over the course of ten weeks to participate in a routine group-facilitated social interaction and conversational group, to control for attention and social interaction effects across conditions.

c) Data Sources

Cognitive and Functional Status

Mini-Mental State Exam (Folstein, Folstein, & McHugh, 1975). The MMSE is one of the most extensively used clinical assessment instruments in the world. It is a brief and objective screening test for cognitive impairment and to record cognitive changes over time (Folstein et al., 1975). The MMSE consists of 11 simple questions which are grouped into 7 domains including orientation to time, orientation to place, registration of three words, attention and calculation, recall of three words, language, and visual construction (Tombaugh & McIntyre, 1992). A MMSE consists of a total score of 30 and takes approximately 10 minutes to administer by a trained interviewer. A score of 23/24 is generally accepted as the cutoff signaling the presence of cognitive impairment while a score of (18-24) indicates mild and (0-17) severe respectively (Tombaugh & McIntyre, 1992).

Mini-Cog Assessment Instrument for Dementia. The Mini-Cog Assessment Instrument is an assessment tool that is widely used in hospitals and long-term care settings to quickly detect cognitive impairment upon admission. This tool allows clinicians to quickly assess numerous cognitive domains including cognitive function, memory, language comprehension, visual motor-skills, and executive functions. The Mini-Cog assessment could be administered in 3 minutes and does not require any special equipment and is not influenced by level of education or language differences. A scoring of a 0-2 indicates positive screen for dementia and a scoring of 3-5 indicates a negative screen for dementia (Borson, Scanlan, Brush, Vitaliano, & Dokmak, 2000).

The Minimum Data Set (MDS) – version 3.0. The Minimum Data Set (MDS) is part of the federally mandated process for clinical assessment of all residents in Medicare and Medicaid certified nursing homes. The entire assessment process is referred to as the Resident Assessment Instrument (RAI) which provides a comprehensive assessment of each resident's functional capabilities and helps the staff to identify health problems. The Resident Assessment Protocols

(RAPs) is also a part of the assessment process and provides the foundation in which a resident's individual care plan is developed. The MDS assessment will be used to assess residents' functional status/activities of daily living and cognitive patterns (memory, recall, cognitive skills for daily decision making). MDS assessments are completed for all residents regardless of source of payment and completed upon admission. In most cases, the individual completing the assessment should be a licensed health care professional employed by the organization.

Emotional Functioning

Geriatric Depression Scale (GDS, short form). The GDS was first developed by Yesavage et al. in 1986 and has since been tested and used with the older population. The GDS short form consist of 15 question, 10 indicating the presence of depression when answered positively and questions 1, 5, 7, 11 and 13 indicating depression when GDS is considered normal depending on age, education, and complaints; 5-8 indicating mild depression; 9-11 indicating moderate depression; and 12-15 indicating severe depression. The GDS could be used by populations with physical illness and emotional and cognitive impairments. The scale takes 5-7 minutes to administer.

Profile of Mood States (POMS2-A short). According to Heuchert & McNair (2012), the POMS2-A short instrument assesses the mood states of individuals 18 years of age and older. This tool is applicable in clinical, medical, research, and athletic settings, where its sensitivity to change makes the assessment ideal for treatment monitoring and evaluation, as well as clinical trials. This tool is a multi-dimensional, comprehensive assessment of transient and fluctuating moods, and enduring states of effects. The POMS2-A could be effective in evaluating patterns of moods states within an individual when used in combination with other verified sources of information (Heuchert & McNair). The POMS2 contain 35 items assess anger hostility (AH), confusion-bewilderment (CB), depression-dejection (DD), fatigue-inertia (FI), tension-anxiety (TA), vigor-activity (VA), friendliness (F) and takes 3-5 minutes to complete (Heuchert & McNair).

Process Evaluation. To qualitatively explore residents' experiences in participating in a creative arts program that utilizes music, imagery, and movement, focus groups and/or individual semi-structured interviews will be conducted with participating residents to understand resident experiences of group participation and their perception of the role of the creative arts in their care at Birmingham Green. In addition, observational assessments will be made at three different group sessions (one in weeks 1-3; one in weeks 4-6; and one in weeks 7-10). Observations will occur during the entire 60-minute session and will be parceled by 20-minute assessment intervals, with observers completing a checklist and open-ended behavioral observation questionnaire for each of the beginning, middle and last 20-minute intervals (see observational assessment in instrument section). Observers will be trained in the assessment protocol by the study PI's prior to assessment. We have pilot tested a behavioral observation instrument, gathering preliminary data from 13 observers who collected data from passive observation of seven music and movement groups conducted at Birmingham Green. Analysis of the observational data suggests that the observational instrument facilitated observer focus and attention to specific verbal, emotional, and behavioral expressions made by residents who participated in each group experience. There was sufficient variation in responses registered across the agreement continuum, implying that the anchoring system (Strongly Disagree to

Strongly Agree) was useful in capturing the range of behavioral expression represented in each group. In the one hour duration of each group, observers were able to complete both the quantitative ratings on the form and the qualitative narrative responses, suggesting an adequate form length. In our intervention study, qualitative responses will be analyzed for codes and themes. In addition, we will also examine the extent to which the MiM intervention is sustained in implementation post-intervention in order to make initial estimates of external validity and program uptake by facility administrators and staff.

d) Data Analyses.

[REDACTED]

e) Personnel Capability. Each of the three PIs brings a unique set of expertise, experience, and skills, without which this study could not be conducted. In addition, all three PIs have worked together collaboratively on the study's community partnership development process and study design, demonstrating an ability to share workload and decision-making. [REDACTED] will provide methodological and community-based treatment intervention expertise for the duration of the study; as a licensed clinician will organize and oversee treatment condition-specific implementation and group facilitator training protocols and procedure, and will oversee the data collection procedures, patient computer-generated random assignment algorithms. Specifically, [REDACTED] has conducted RCT intervention studies with adult populations at 3 mental health and substance abuse treatment facilities, and has facility in developing

interdisciplinary multi-institutional treatment research collaborations. [REDACTED] has extensive experience working on community-based projects related to older adults and their caregivers, and has been an established researcher in the Northern Virginia community for more than ten years. [REDACTED] recently conducted and supervised the implementation of a large needs assessment for kinship care providers, and is the lead researcher on a kinship care, grounded theory project. She is currently a part of a multidisciplinary research team developing and evaluating a behavioral health training program for long-term care workers related to coping with behaviors associated with depression, dementia and delirium. [REDACTED] is a John A. Hartford Geriatric Scholar in Social Work. [REDACTED] will help in resident cognitive screening and assessment, will participate in the training and supervision of student research assistants, and will assist with data analysis. [REDACTED] has extensive social work practice experience with low-income minority older adults, and her research focuses on the social determinants of health inequities across the life course, particularly for older adults, racial and ethnic minorities, immigrants, and other underserved populations. [REDACTED] has advanced training in research methods and in both qualitative and quantitative data analytic techniques. [REDACTED] will help with all aspects of the study's implementation and data analysis.

f) Organizational Capacity. George Mason University is classified by the Carnegie Commission as a “Doctoral University with High Research Activity.” More than 32,000 students are enrolled in 70 Bachelor’s, 74 Master’s, and 35 Doctoral degree programs located in colleges of science, law, engineering, health and human services, education, management, humanities and social sciences, public policy, visual and performing arts, and conflict analysis and resolution. GMU research expenditures were over \$115M last year in externally funded research grants and contracts with 75% from federal agencies, most notably DoD, NASA, NSF, and HHS. The University research support infrastructure is administered by the Vice President for Research who oversees: Office of Sponsored Programs (staff of over 40 divided into pre- and post-award), Office of Research Subject Protections with four staff plus IRB, and the Office of Technology Transfer with a staff of five. The proposed PI will also have post-award support through the College of Health and Human Services Office of Research. That office coordinates grant proposal reviews, facilitates cross-discipline research collaborations, manages payroll processes for project personnel, conducts regular budget reviews with PIs, assists with post award problems and required reports, and supports the PI and research projects as needed.

Partners. Birmingham Green was founded in 1927 as a District Home under legislation passed in 1918 by the General Assembly, which encouraged jurisdictions to join together to establish homes for the poor. Five jurisdictions agreed to participate in the District Home at Manassas, and contributed to the purchase of a 54-acre site, which was part of a larger land tract once known as Birmingham Green. The participating jurisdictions were the Counties of Culpeper, Fairfax, Fauquier, Prince William, and the City of Alexandria. The County of Loudoun joined in the 1940’s. The County of Culpeper withdrew in 1980’s. The original District Home included farm operations as a source of food commodities, some income, and to provide work for residents. By the 1950’s the farming activities were phased out and the home was licensed by the state as a Rest Home. By mid-1950 the District Home had been expanded to accommodate about 70 residents. In subsequent years the licensure status evolved and continues to be licensed today as a 64 bed Assisted Living Facility. The resident accommodations are still very similar to when the building was constructed in 1927. The original building of 20,000 square feet housing the 64 bed

Assisted Living Facility is linked by a connecting corridor to the 70,000 square foot nursing home, opened in 1991 and housing 180 beds. The \$15 million budget for the two long term care facilities is covered by income from Medicaid payments for services, Auxiliary Grants, limited resident resources, and over \$2 million in annual subsidies from the participating jurisdictions. Groundbreaking took place on September 15, 2006 and the residents moved into the new facility on April 24, 2008. The new facility represents an innovative plan to construct 92 apartments (beds) using HUD 202 and HUD 811 funding to provide assisted living services to adults. The new facility is known as Willow Oaks. The HUD 202 (BGALI) project for low income elderly is known as Willow Oaks Court has a total of 77 beds. HUD 811 (BGADSI) is for low income persons with disabilities and is known as Willow Oaks Place, has 15 beds.

g) Outline for Research Report. As required, we will submit a 30-40 page research report that will include an abstract, an executive summary, and a full research report. The full research report will be a comprehensive report of the project, and will include:

- The importance of the research topic, including the research questions and hypotheses
- A review of the existing literature and previous work on the topic
- A description of the intervention and data collection process
- A summary of the methodology used, analyses conducted, and findings
- A conclusions section, including research and/or policy recommendations, based on the findings. Future areas of research will be included in this section.

h) Outcomes and Measurement. The proposed study addresses the National Endowment for the Arts’ goal of *Enhancing Knowledge and Understanding* by collecting primary data on the effects of a music, imagery, and movement (MiM) intervention. This randomized controlled study will provide rich information on how this intervention affects the emotional and cognitive functioning of older adults living in a long-term care facility. Our rigorous methodological approach will provide an excellent foundation to expand this intervention and improve the health and well-being of older adults with dementia.

i) Detailed Schedule

May-Aug 2014	Finalize the cognitive and emotional functioning assessment battery. Pilot test the instruments to be used in the study. Finalize the MiM treatment protocol. Train group facilitators.
Sept 1, 2014	Resident recruitment and consenting procedures will begin
Sept 15-Dec 1, 2014	Intervention for Cohort 1
Dec 15, 2014-Mar 15, 2015	Intervention for Cohort 2
Apr 1-Jul 15, 2015	Intervention for Cohort 3
Aug 2015-May 2016	Data analysis, presentations at conferences and manuscript writing Final Research Report drafted and submitted to NEA

j) Plans for Reporting and Disseminating Results. In addition to the final research report, peer-reviewed manuscript submissions, and professional presentations at the Gerontological Society of America annual meeting (in Washington D.C. November, 2014; Orlando, Florida, November, 2015) and the Society for Social Work and Research annual meeting (SSWR; New Orleans, Louisiana, January, 2015), [REDACTED]

Measuring the Value of Arts in America over Time: Travel Cost, Time Use, and Neighborhood Dynamics

a. Research question(s).

The arts sector in the United States occupies a vital – yet difficult to measure – role in the broader economy and society. This project will use new datasets to provide multiple, complementary estimates of the economic value and impact of arts-related activities in the U.S.. This project will address three primary questions about the impact of the arts sector: (1) who spends how much time on arts-related activities? (2) what does time spent on the arts reveal about the economic value of the arts in society? and (3) how do local arts and cultural districts affect neighborhood dynamics? The first question concerns updated descriptions of the determinants of arts participation, whereas the latter two questions involve economic analysis of market and nonmarket values associated with arts participation.

The investigation of time spent with arts and cultural activities will bring updated answers to several specific research questions. These questions include:

- How do demographic and socioeconomic characteristics of individuals explain the variation in participation in arts-related activities?
- What geographic/environmental factors make participation more likely and more intense?
- What categories of time use substitute for arts activities, and which complement them?
- How do these answers differ for those who vocationally participate in the arts?

Answers to these questions will advance the literature on the impact of the arts-sector on Americans' daily time use. Analyzing time use in the arts sector is nothing novel – although time diary datasets have not been exploited as thoroughly as they might and most attention has been drawn to the Survey of Public Participation in the Arts (SPPA) and other surveys (see, e.g., Robinson 1989, Peterson and Kern 1996, Robinson and Godbey 1997, Owens and Hofferth 2001, DiMaggio and Mukhtar 2004). Survey data like the SPPA, however detailed they may be about types of arts activities, rely on respondents' long-term recall and lack the granularity to measure amount of time spent in arts activities. They typically capture only frequency, not duration. The American Time Use Survey (ATUS) delivers details on duration for various arts-related activities. Arts researchers have not studied the ATUS much (e.g., Vandewater et al. 2006). Time-use surveys in other countries have been studied in the context of arts participation and determinants of cultural capital, although many of them are quite dated (e.g., Sturgis and Jackson 2003, Sullivan and Katz-Gerro 2007, Robson 2009).

The analysis of time use will be extended to capture the value of that time spent on the arts. A better understanding of the value of time in the arts is arguably crucial when considering the arts as experiential goods, high arts as often drawing on high-wage participants, and the often lengthy process cultivating taste or “learning by consuming.” This approach leverages the very large literature on value-of-time estimates so vital to transportation planning and other areas. In short, I will answer the specific questions:

- What is the value of the time spent on the arts by Americans?
- How does that value vary by socioeconomics, geography, and arts activity categories?
- What does this reveal about the “surplus” value received by arts participants?

These answers will offer a “lower-bound” of the economic value of these arts activities in the U.S. This analysis builds on the travel cost method (TCM) estimating economic values. TCM is a very well established, “revealed preference” method for estimating economic values for goods like attending high school theatre performances (Champ et al. 2003, Navrud and Ready 2002). It

is part of a broader toolkit that includes complementary valuation techniques such as contingent valuation (CV) and hedonic pricing (HP). CV studies are fairly common and increasingly used in the arts context (Noonan 2003, 2004), and HP is also increasingly used to value architectural and cultural resources (e.g., Asabere et al. 1989, Noonan 2007). Yet, TCM has been applied only sparingly in the arts and cultural realm to estimate economic values (Navrud and Ready 2002). A handful of TCM studies of cultural sites have been published, nearly all of them outside of the U.S. (e.g., Martin 1994, Forrest et al. 2000, Bedate et al. 2004, Poor and Smith 2004, Boter et al. 2005, Alberini and Longo 2006). Travel costs are vital to robust studies of the demand for the arts (Seaman 2006).

Yet TCM applications to the arts are still rare (see, e.g., Vicente and de Frutos 2011), despite Navrud and Ready's (2002) call for more of these. This project will answer research questions related to the value of time spent on the arts more generally, rather than estimating the value of particular arts venues, exhibitions, or resources. Data limitations prevent the estimation of a proper TCM model. Ideally, we would also have rich data on all of the attendant costs of travel, ticket price, destinations and activity details, etc. Even lacking that information, the value of time invested in traveling to and participating in the arts activity still constitute a portion – perhaps even a large portion – of the full price of arts activities. Theory underlying TCM holds that participation decisions reveal the total value of arts experiences, which must be at least as great as those travel costs. Thus, while the approach taken here will only get a partial value for time spent on the arts, it is certainly a “lower bound” of that value. We will be able to confidently report that the value of the arts *is at least as great as the value estimated*. A few assumptions, relying on measures of price elasticities from other studies (e.g., Ekelund and Ritenour 1999, Seaman 2006), will also allow us to offer a ballpark estimate of the total surplus economic value derived from these arts activities.

The second component of this research addresses the impact of arts districts on local economic development and neighborhood dynamics. It enters into a literature dominated by case studies and advocacy (Markusen and Gadwa 2010). Case studies of impacts of arts districts and cultural clusters abound (e.g., Stern and Seifert 2010, Cinti 2008, Sacco et al. 2009). Yet conventional research methods do not permit generalizable estimates of impacts (and limit their ability to identify causal effects) because their data are drawn from such limited samples or from a single case. The specific research questions I seek to answer with this analysis include:

- What kinds of neighborhoods tend to host arts districts? What kinds are adjacent?
- What are the trends in demographic and economic attributes in those neighborhoods?
- For arts districts established in the 1990s, what can we say about the *causal* impacts of those districts on demographic and economic trends in those neighborhoods?
- Have these arts districts impacted neighborhood stability during the recent recession?

This systematic analysis of neighborhoods at the national scale directly addresses a high-priority research agenda item of Markusen and Gadwa (2010): testing the causal links. I will move past comparative descriptions and case studies by employing “more sophisticated multivariate models” (p.388) with better data. My method (discussed below) identifies causal factors and pathways, albeit in a reduced-form model using aggregate data. One key impact of arts districts in this study is the impact on property values. Following the logic of hedonic price theory (Krupka and Noonan 2009), another staple of nonmarket valuation techniques, this research will enable the estimation of the economic benefits (in dollar terms) of these arts districts.

Answers to these questions will directly expand the evidence on arts' impact on time use, economic value, and local economic development. They will advance the scholarly literature with new and robust empirical relationships measured using relatively underutilized data. Moreover, the resulting estimates of the economic values at stake in the arts sector – measured at a national scale – are novel. The time-use study will help arts policy target underserved and more responsive populations and help advocates make more compelling arguments for arts support. The arts district analysis can directly inform policy decisions about locating districts, mitigating unintended consequences, and property tax base implications.

References:

- Alberini, A. and Longo, A. (2006) "Combining the Travel Cost and Contingent Behavior Methods to Value Cultural Heritage Sites; Evidence from Armenia." *Journal of Cultural Economics* 30: 287-304.
- Asabere, P. K., Hachey, G. and Grubaugh, S. (1989) "Architecture, Historic Zoning, and the Value of Homes." *Journal of Real Estate Finance and Economics*, 2: 181-195.
- Bedate, A., Herrero, L. C., and Sanz, J. A. (2004) "Economic valuation of the cultural heritage: application to four case studies in Spain." *Journal of Cultural Heritage* 5(1): 101-111.
- Boter, J., Rouwendal, J., and Wedel, M. (2005) "Employing Travel Time to Compare the Value of Competing Cultural Organizations." *Journal of Cultural Economics* 29: 19-33.
- Champ, P. A., Boyle, K. J., and Brown, T. C. (2003) *A Primer on Nonmarket Valuation*. New York: Springer.
- Cinti, T. (2008) "Cultural Clusters and Districts: The State of the Art," in P. Cook and L. Lazzarotti (eds.) *Creative cities, cultural clusters and local economic development*. Northampton, MA: Edward Elgar, pp. 70-92.
- DiMaggio, P. and Mukhtar, T. (2004). "Arts participation as cultural capital in the United States, 1982–2002: Signs of decline?" *Poetics* 32(2): 169-194.
- Ekelund, R. B. and Ritenour, S. (1999) "An Exploration of the Beckerian Theory of Time Costs: Symphony Concert Demand." *American Journal of Economics and Sociology* 58(4): 887-899.
- Forrest, D., Grime, K., and Woods, R. (2000) "Is It Worth Subsidising Regional Repertory Theatre?" *Oxford Economic Papers* 52: 381–397.
- Markusen, A. and Gadwa, A. (2010) "Arts and Culture in Urban or Regional Planning: A Review and Research Agenda." *Journal of Planning Education and Research* 29(3): 379-391.
- Martin, F. (1994) "Determining the Size of Museum Subsidies." *Journal of Cultural Economics* 18(4): 255-270.
- Navrud, S. and Ready, R. C. (eds.) (2002) *Valuing Cultural Heritage: Applying Environmental Valuation Techniques to Historic Buildings, Monuments and Artifacts*. Northampton, MA: Edward Elgar.
- Noonan, D. S. (2003) "Contingent Valuation and Cultural Resources: A Meta-Analytic Review of the Literature," *Journal of Cultural Economics* 27(3-4): 159-176.
- Noonan, D. S. (2004) "Valuing Arts and Culture: A Research Agenda for Contingent Valuation," *Journal of Arts Management, Law, and Society* 34(3): 205-221.
- Noonan, D. S. (2007) "Finding an Impact of Preservation Policies: Price Effects of Historic Landmarks on Attached Homes in Chicago 1990-1999." *Economic Development Quarterly*, 21 (1): 17-33.
- Owens, T. J. and Hofferth, S. L. *Children at the Millennium*. Oxford: Elsevier.

- Peterson, R. A. and Kern, R. M. (1996) "Changing Highbrow Taste: From Snob to Omnivore." *American Sociological Review* 61(5): 900-907.
- Poor, P. J. and Smith, J. M. (2004) "Travel Cost Analysis of a Cultural Heritage Site: The Case of Historic St. Mary's City of Maryland." *Journal of Cultural Economics* 28: 217-229.
- Robinson, J. P. (1989) "Survey Organization Differences in Estimating Public Participation in the Arts." *Public Opinion Quarterly* 53: 397-414.
- Robinson, J. P. and Godbey, G. (1997) *Time for Life: The Surprising Ways Americans Use Their Time*. University Park, PA: Penn State Press.
- Robson, K. (2009) "Teenage Time Use as Investment in Cultural Capital." *Quantifying Theory: Pierre Bourdieu*. K. Robson and C. Sanders, eds. New York: Springer, pp. 105-116.
- Sacco, P. L., Blessi, G. T. and Nuccio, M. (2009) "Cultural Policies and Local Planning Strategies: What Is the Role of Culture in Local Sustainable Development?" *Journal of Arts Management, Law, and Society* 39(1): 45-63.
- Seaman, B. (2006) "Empirical Studies of Demand for the Performing Arts" in V. Ginsburg and D. Throsby (eds.), *Handbook on the Economics of Art and Culture: Volume 1*, pp. 415-472.
- Stern, M. J. and Seifert, S. C. (2010) "Cultural Clusters: The Implications of Cultural Assets Agglomeration for Neighborhood Revitalization." *Journal of Planning Education and Research* 29(3): 262-279.
- Sturgis, P. and Jackson, J. (2003). *Examining participation in sporting and cultural activities: Analysis of the UK 2000 Time Use Survey. Phase 2*. Department of Culture, Media and Sport.
- Sullivan, O. and Katz-Gerro, T. (2007) "The Omnivore Thesis Revisited: Voracious Cultural Consumers." *European Sociological Review* 23(3): 123-137.
- Vandewater, E. A., Bickham, D. S., and Lee, J. H. (2006) "Time Well Spent? Relating Television Use to Children's Free-Time Activities." *Pediatrics* 117(2): e181-e191.
- Vicente, E. and de Frutos, P. (2011) "Application of the travel cost method to estimate the economic value of cultural goods: Blockbuster art exhibitions." *Hacienda Pública Española* 196(1): 37-63.

b. Research design.

To address these questions, this project proceeds in two phases. **Phase 1** involves estimating behavioral models using detailed time-use survey data collected at the national scale. After assembling and cleaning the data, the initial analysis will estimate a series of models explaining arts participation in a multivariate regression framework. This approach allows for identification of the determinants of daily arts participation related to factors outside the individual's immediate control (e.g., day of week, certain demographics, geography) and a deeper investigation into individual-level traits that might be jointly determined with arts participation (e.g., time spent watching television). Statistical models with endogenous variables will be interpreted as identifying correlations with (rather than causes of) arts participation.

This research will use a long series of time diary data (ATUS) and rely on its several arts-related measures. The basic research design leverages this existing, large-scale, and high-quality survey's comprehensive measures of time use at a very refined scale and coupled with excellent measures of income, employment, household characteristics, and other demographics (as linked to another high-quality national survey, the Current Population Survey). Time use decisions (T_{ij} for individual i and activity j) will be explained by variation in individual characteristics (X_i) and attributes of the time and location of the survey (D_i and G_i , respectively). Multivariate statistical analyses will identify how X , D , and G predict T , and a rich description of correlations (and

conditional correlations) among variables will indicate how T_{ij} and T_{ik} (for $j \neq k$) relate. Models where T is measured as an indicator variable (1 for participation on the diary day, 0 otherwise) will be estimated separately than models where T is measured continuously (as minutes spent in that activity). A joint, two-stage model, where the participation decision is modeled in the first stage and the duration is modeled conditional upon choosing to participate, will also be appropriate for this analysis.

This work sets the stage for the second task in Phase 1, the calculation of a lower-bound on the economic value of arts participation. These estimates will not be attributable with precision to any particular arts activity, venue, or production. But what they will give is a quantified measure of the kind of value that Americans place on the arts as revealed through their behavior. The costly investment of their time in pursuing the arts indicates a revealed preference, enabling us to infer an economic value following the TCM. I will use standard techniques in TCM studies for using income, employment type, travel time, wait time, and time spent on-site (see, e.g., Champ et al. 2003). For all arts activities, even those that do not involve travel, simple value-of-time estimates for time spent in the activity will be estimated. Using sampling weights provided in the ATUS for different years, these (lower-bound) economic value estimates will be aggregated up to regional and national scales, and will be scaled up from daily values to weekly and annual values. I will also indicate how the average economic values vary across time and space (and across other demographic factors that do not directly enter the estimated time-cost formula – e.g., race, education).

Finally, for the arts activities like attending performing arts, museums, and movies (although the full price and site information will not be known), a rough estimate for the total economic benefits will be made. This will be done using previous estimates of price elasticities of demand for arts participation and a sensitivity analysis for alternative “full price” estimates. The most important, and most conservative, model will assume an admission price of zero and no other unobserved participation costs – yielding a lower-bound estimate of the total economic benefits from participation in this arts activity. Again, this estimate can be aggregated to the entire nation, albeit with some caveats.

Phase 2 of the project shifts attention to local arts clusters and identifies the impacts of cultural districts on economic values and socioeconomic characteristics of neighborhoods. This phase replicates a multi-equation multivariate statistical approach to identify the (causal) local effects of cultural districts on a host of neighborhood indicators (e.g., property values, income, racial composition) that has been effectively used for non-arts applications. This very data-intensive technique – leveraging a panel dataset of time-consistent Census geographies that stretches back several decades – relies on a dynamic panel data estimator to obtain consistent estimates of trends in neighborhoods in and around arts districts and how those trends differ from otherwise similar neighborhoods. This approach contrasts with the many case studies already available in the literature. It almost directly responds to Markusen and Gadwa (2010):

“To definitely detect results within a city or metro, longitudinal analysis must track waning as well as waxing cultural nodes... To guide city planners and decision-makers on cultural versus other public investments, and which appear to be superior cultural interventions, researchers should engage in comparative research across a large number of cities (or metros), not a small undertaking.” (p.387)

This phase promises to identify the average impacts of cultural districts (specifically, those established in 1999 or earlier). New major cultural institutions may also be included in the

model. Among the impacts measured is, following hedonic price theory, a measure of economic value attributed to these localized amenities. Because neighborhood dynamics are complex and multidimensional, this proposal employs a research design that follows the established approach of Krupka and Noonan (2009) and Noonan et al. (2007). They modeled place-based efforts to substantially improve local amenities and bring economic development to targeted neighborhoods. The model is on a national scale and spans several decades, because the extra data are needed to identify existing trends and robust counterfactuals about neighborhood dynamics, and because the policies in question were implemented at numerous locations around the country. The development of arts districts in cities around the country also fits this model.

Research in Phase 2 looks at the effects of arts districts in a simultaneous equations setting that allows for their multidimensional effects and interactions among the various neighborhood indicators. Indicators for price (P), housing stock characteristics (S), and neighborhood demographics (N) are available for neighborhoods at each decade from 1970-2000. Each indicator is modeled to be a function of its lagged value (i.e., from the previous decade), the other indicators, and an array of exogenous geographic control variables (G). Also in each equation is the presence of an arts district (D) in the neighborhood or in an adjacent neighborhood, two different “treatment” variables. The model allows for both treatment variables to also be endogenous, instrumented for by the twice-lagged levels of each neighborhood indicator (P , S , N) and the exogenous factors (G). Each of these equations (I anticipate 19 endogenous indicators initially) operate simultaneously. Unobserved time-invariant neighborhood characteristics and metropolitan-scale trends may pose serious omitted variable problems. Thus, the equations are all considered as first-differences (i.e., variables are measured as changes from the previous Census) and everything is differenced from metropolitan-level means. The difference-in-difference approach helps identify the causal effects of districts. Allowing for the simultaneity in various neighborhood characteristics further enhances the model’s robustness to endogeneity, likely avoiding seriously biased impact estimates. The specification also allows for estimating districts’ effects on neighborhood indicators *other than property values*. See Krupka and Noonan (2009) for more details on the model specification, as space prevents a more detailed discussion here.

References:

Krupka, D. J., and Noonan, D. S. (2009) “Empowerment Zones, Neighborhood Change and Owner-Occupied Housing.” *Regional Science and Urban Economics* 39(4): 386-396.

Noonan, D.S., Krupka, D. J., and Baden, B. M. (2007) “Neighborhood Dynamics and Price Effects of Superfund Site Clean-up.” *Journal of Regional Science* 47(4): 665-692.

c. Data source(s).

Three main data sources rarely applied to scholarly arts research will be applied. First, the American Time Use Survey (2003 – 2010) will be used extensively in Phase 1. The nationally representative ATUS sample includes roughly 26,000 households per year, from 2003-2010. This dataset is linked to a second dataset, the Current Population Survey, to obtain more precise information about geographic locations. These datasets are already linked in an ATUS-CPS dataset from the Bureau of Labor Statistics. The details about activities and location (down to the metropolitan or city level) are critical to being able to richly map the arts behavior landscape, and are available in the CPS. Other variables of drawn from the ATUS-CPS of particular interest here include: occupation categories (e.g., codes for artists, designers, actors,

producers and directors, dancers and choreographers, musicians, writers and authors, and other related occupations), industry categories (artists, cultural institutions), and income and employment status variables. Detailed time-diary data, including the time of day and duration of various activities, will also be obtained and analyzed. These variables include work time (for artists) and arts activities, like the “arts and entertainment” category (and sub-categories: arts and crafts with children, arts and crafts as a hobby, attending performing arts, attending museums, attending movies, waiting associated with arts and entertainment, and travel related to arts and entertainment), and other activities that might complement or substitute.

The third data source, used extensively in Phase 2, is U.S. Census data from 1980, 1990, and 2000, as processed by [Geolytics, Inc.](#) This proprietary dataset projects historical decennial Census data onto time-invariant geographic boundaries (circa 2000), which is essential for any analysis of local trends that spans more than 10 years, because Census boundaries frequently change. The analysis will use block-group level socioeconomic indicators back to 1980, plus tract-level indicators for 1970 as needed. The data will include the entire U.S. as covered by the Census “long form” sampling and its 1000+ Census long-form variables, including variables of interest (e.g., median housing price, population density, median household income, percent in poverty, percent white, percent graduating college, percent of households with children, median year home built, percent renters, percent of buildings with one unit, average commute time). See Noonan et al. (2007) for a full list to be used in this analysis.

Spatial data on local arts districts will be gathered manually, building off of lists published elsewhere. For example, Frost-Kumpf (1998) points to arts districts for over 90 U.S. cities, and Strom (2002) indicates 71 major cultural facilities getting built or renovated between 1985-2005, most of which pre-2000. A sample of major U.S. arts districts along with their implementation date will be mapped in ArcGIS. Additional data will be merged into these datasets as needed, all from public sources. This includes merging “distance to city center” (as used in Noonan et al. 2007) with the Geolytics data.

References:

- Frost-Kumpf, H. A. (1998) *Cultural Districts: The Arts As a Strategy for Revitalizing Our Cities* Washington, DC: Americans for the Arts.
- Strom, E. (2002) “Converting Pork in to Porcelain: Cultural Institutions and Downtown Development.” *Urban Affairs Review* 38(1): 3-21.

d. Data analyses.

At the core, one model underpins each phase of this project. For the arts behavior model, the basic model takes the form:

$$(1) \quad T_{ij} = \alpha + \beta_1 X_i + \beta_2 D_i + \beta_3 G_i + \varepsilon_{ij} .$$

Variables represent time-use decisions (T), individual characteristics (X), attributes of the survey time (D), and attributes of the respondents’ location (G), all for individual i and activity j . Equation (1) will be adjusted as appropriate for the data and, in particular, for the dependent variable. When T is a binary indicator of participation, logit models will be estimated, and when T is continuous then a tobit estimator will be employed. A two-stage model that incorporates both decisions will also be fit. To deal with the large number of zeros in the participation decision, a Box-Cox double hurdle specification will likely be employed. Control variables for the time-use models include time variables (day of week, holiday dummy, year-month dummies) and county indicators (G). They also include personal characteristics to capture preferences

(e.g., age, sex, number of children, income, employment status, occupation class, race, education, cohabitating status). This approach resembles Zivin and Neidell’s (2010). The estimates for the parameters (β) will provide answers to the specific research questions posed about time use. When equation (1) is modified to allow for other time uses ($T_{ik} k \neq j$) to be included as regressors, the interpretation will shift to be strictly descriptive or correlative (not causal) and hypotheses about substitute and complementary activities can be tested. Finally, adding an interaction term with an indicator for “status as arts worker” will allow identification of any different effects for artists. All of these regressions will be estimated using sample weights provided from ATUS-CPS to allow the results to represent the national population.

For the value-of-time analysis, the time-use estimates available directly from the ATUS-CPS data will be converted via a formula to arrive at the value of time spent. That standard TCM formula will draw on factors like income, employment conditions, and time spent waiting, traveling, and in the activity, all also variables in the data. These values will be aggregated, using the sample weights, to the whole population and to various subsets (e.g., by region, by year, by type of activity). The imputation of a consumer surplus using assumed elasticity measures will also be computed in the usual fashion. These value-of-time estimates follow a deterministic approach, so no inferential statistics appear here. Nonetheless, to assess how these values vary across socioeconomic groups (in particular, by age, race, and education), some auxiliary regressions will be run to predict the individual value-of-time spent on the arts using these exogenous demographic variables.

For the neighborhood dynamics model, the data analysis closely follows Noonan et al. (2007). Given neighborhood-level measures for price (P), housing stock (S), and demographics (N), arts district presence (D), and geographic control variables (G), a system of equations for these endogenous variables is:

$$\begin{aligned}
 P_{it} &= \beta_{0t} + \beta_D D_{it} + \beta_S S_{it} + \beta_N N_{it} + \beta_G G_i + \varepsilon_{1it} \\
 (2) \quad S_{it} &= \gamma_S S_{it-1} + \gamma_{0t} + \gamma_D D_{it} + \gamma_N N_{it} + \gamma_G G_i + \varepsilon_{2it} \\
 N_{it} &= \delta_N N_{it-1} + \delta_{0t} + \delta_D D_{it} + \delta_S S_{it} + \delta_G G_i + \varepsilon_{3it}
 \end{aligned}$$

This system is estimated in first-differences, with one exception: the time-invariant geographic factors G re-enter to allow for time-varying parameters. The result is a rich depiction of the effects of districts (being inside a district or just ‘near’ to a district) on many socioeconomic indicators for Census block-groups.

To identify the parameters in equation (2), I use Census data from 1980, 1990, and 2000 from Geolytics. This database holds block-group boundaries fixed over time, enabling a panel data estimator for the system of equations with numerous endogenous variables. To eliminate any time-invariant unobservables and reduce the risk of endogeneity in D , I estimate everything in first-difference form, de-measured at the metropolitan level (i.e., MSA-level fixed effects), in three-stage least squares (3SLS). This allows for the twice-lagged levels (i.e., 1980 levels) to instrument for each variable. (The exceptions to this are G , which instruments for itself, and D , which lacks a 1980 measure and relies on a set of other metropolitan-level measures from 1980 as instruments.) Sargan tests for overidentification and Durbin-Wu-Hausman tests for endogeneity will be performed on an equation-by-equation basis as diagnostic checks.

References:

Zivin, G. J. and Neidell, M. (2010) “Temperature and the Allocation of Time: Implications for Climate Change.” National Bureau of Economic Research working paper #15717.

e. Personnel capability.

My CV shows numerous publications in peer-reviewed journals, spanning 10 years, that directly relate to nonmarket valuation techniques and arts policy. Serving on the *Journal of Cultural Economics* editorial board for the past 4 years, I am acutely aware of the need for this kind of research and the impact it will make in the literature. Moreover, my past publications demonstrate my facility with large datasets and the relevant statistical estimators. I will commit 100% of my time for 1.5 months in the summer, plus more of my time (uncharged) as an instructor of at least one independent study course. This summer 2012 course will attract undergraduate and graduate students at Georgia Tech to contribute to the project for course credit. I expect to recruit several skilled students for this effort, which would be a substantial in-kind contribution to the project. Plus, as I will work diligently to draft and publish the papers during the 2012-13 school year, I expect to run a second independent study during the fall of 2012 or coordinate with colleague (Prof. Jennifer Clark) to integrate my data and research questions into empirical student projects for her economic development courses.

I also plan to hire and supervise an undergraduate research assistant in the summer of 2012 for 80 hours to help create the GIS maps for the arts districts.

f. Organizational capacity.

Through Georgia Tech's computing resources, I have access to all the statistical and GIS software that I will need for this study. Moreover, I have access to a large pool of interested and skilled undergraduate and graduate students in public policy and regional planning. Based on my experience, recruiting several of these students to assist in this project for course credit (as well as the one paid position) will be easy. I also plan to leverage an undergraduate research fellowship program that I run, so another student will spend the 2012-13 year researching for this project (funded by other sponsors).

I already have all of the data necessary to complete this project. The ATUS-CPS is already running on several of my machines. I also already have the Geolytics data and have published with it regularly. Specifically, for the Phase 2 analysis, I have performed and published two very similar analyses, looking at Superfund cleanups (Noonan et al. 2007) and Empowerment Zones (Krupka and Noonan 2009) instead of arts districts. These papers are here:

- <http://www.prism.gatech.edu/~dn56/NPL.JRS.pdf>
- <http://www.prism.gatech.edu/~dn56/EZ.RSUE.pdf>

g. Outline for research report.

- I. Executive summary
- II. Introduction
- III. Overview of methods used
- IV. Findings
 - a. Who participates, spends time on the arts? Where are they?
 - b. Estimates of the time value of arts attendance, time spent on arts more generally
 - c. Estimates of economic and neighborhood impacts of arts districts
- V. Conclusions and recommendations for policy based on findings
- VI. References
- VII. Appendix
 - a. Summary of methodology used for building datasets
 - b. Summary of methodology used for time-use model, value-of-time estimates

- c. Summary of methodology used for neighborhood-dynamics model
- d. Web links to cultural districts shapefile, all working papers

h. Outcome(s) and Measurements.

The anticipated outcomes include (a) demonstrating the utility of several datasets rarely (or not yet) applied to arts policy research, (b) providing new and more comprehensive evidence of the economic value of arts attendance, of time spent in the arts, and of proximity to local arts amenities, and (c) engaging and energizing the arts research community to tackle arts policy questions with rigorously and quantitatively. The first outcome will be achieved with the publication of peer-reviewed articles based on this project. Likewise, the third outcome will be achieved by the publications, conference presentations (I plan to present at the next meeting of the Association of Cultural Economics International), working papers, other dissemination of the results. Moreover, publishing quantitative and policy relevant work, especially to economists, will promote arts research to an audience that often overlooks it. Economic value estimates for the arts often find controversy, and I anticipate some of these results will inspire responses and further research. The economic value estimates – themselves direct evidence of the value and impacts of the arts – will be generated and published in arts and cultural policy journals.

Performance will be measured in a similarly straightforward way: by the publication of the research findings in peer-reviewed journals. The publications – vetted through the scholarly peer-review process – will provide the most definite evidence possible of this project providing quality new evidence of arts’ economic impact. I expect 2 new publications in the *Journal of Cultural Economics* and 1-2 more publications in other arts policy journals.

i. Schedule.

Start:	May 7, 2012
Independent study course begins	May 14, 2012
Phase 1 preliminary analysis complete:	July 7, 2012
Phase 2 preliminary analysis complete:	July 28, 2012
Independent study course ends	August 4, 2012
Writing report, papers	April 1, 2013
End:	May 6, 2013

j. Plans for reporting and disseminating the study results.

The results from this project will be three to four separate papers, two for Phase 1 and one or two for Phase 2, submitted to academic journals for publication. Working papers that precede each of the manuscripts for peer-review publication will also be made available to the public for free download.

k. Plans for making the report and data accessible

The summary research report delivered to the NEA will be made available publicly online as a working paper in the School of Public Policy. The new data – the arts district maps – will be made available on my School website for free download. The public datasets (ATUS, CPS) will already be available and the Geolytics data are proprietary and available from Geolytics.

Project Narrative

Impact of the Arts on Individual-Level Contributions to Civil Society

A. Research Questions

Civil society is the overarching collection of laws, norms, and customs that citizens abide by, as well as the nongovernmental organizations and associations they create, that make society a better place to live. While there is no single measure of civil society, definitions of civil society often include participation in nonprofit organizations and associations, and other forms of civic engagement (Anheir, 2005; Jones, 2006). While civic engagement is certainly one expression of civil society (Putnam, 1995; Newton, 2001; Foley and Edwards, 1996; Kwak, Shah and Holbert, 2004), the term civil society derives from the notion of civility, which is defined as courtesy, politeness, or polite actions or expressions; the act of showing regard for others (Merriam Webster Dictionary, 2011). Thus, civil society also encompasses the expression of social norms and customs of ‘other-regarding’ behavior.

The proposed study seeks to test a simple proposition, which is that arts exposure and artistic expression promote and enhance U.S. civil society. We view civil society as encompassing various forms of civic engagement, high levels of tolerance for social differences, and the expression of acts that more often place the interests of others over the interests of self.

The following research questions will be investigated in this study:

1. Does greater arts exposure and artistic expression increase civic engagement of individuals?
2. Does greater arts exposure and artistic expression increase social tolerance of individuals?
3. Does greater arts exposure and artistic expression increase acts of ‘other-regarding’ behavior?

The importance of this research is that it contributes to NEA’s strategic goal of promoting public knowledge and understanding about the contribution of the arts and its importance to the health of civil society. Specifically, this study seeks to provide quantitative evidence in support of the argument that arts have the capacity “to advance pluralism, promote voluntary action, accommodate diversity, and champion individual visions of the public good” (Sievers, 2009). In practical terms, if our hypotheses prove positive, the findings will allow strengthening the case for continuous government support for the arts and suggest a need to include arts as a possible solution in political debate about declining social capital.

Hypotheses

The following hypotheses will be tested in this study:

- H1: Individuals with greater arts exposure and who have engaged in artistic expression will demonstrate higher rates of participation in civic organizations and associations

- H2: Individuals with greater arts exposure and who have engaged in artistic expression will demonstrate higher rates of volunteering for nonprofit organizations and civic causes
- H3: Individuals with greater arts exposure and who have engaged in artistic expression will demonstrate higher rates of giving monetary contributions to civic and charitable organizations and causes.
- H4: Individuals with greater arts exposure and who have engaged in artistic expression will have a greater likelihood of voting.
- H5: Individuals with greater arts exposure and who have engaged in artistic expression will demonstrate greater social tolerance as evidenced by a greater willingness to allow persons of politically marginalized groups and non-mainstream views to give a speech in their community.
- H6: Individuals with greater arts exposure and who have engaged in artistic expression will demonstrate greater social tolerance as evidenced by a greater willingness to allow persons of politically marginalized groups and non-mainstream views to teach in public schools.
- H7: Individuals with greater arts exposure and who have engaged in artistic expression are more inclined to espouse “other-regarding” attitudes.
- H8: Individuals with greater arts exposure and who have engaged in artistic expression are more likely to display “other-regarding” behaviors.

B. Research Design

A cross-sectional analysis will be used to test the hypotheses described above, relying on data from the 2002 General Social Survey (GSS). This study will employ quantitative data analysis (multivariate regression) to answer the research questions. Individual adults living in the United States are the units of analysis to be investigated in this study.

C. Data Source

The GSS is a full probability sample of adults living in households in the United States, and had a response rate of 70.1% in 2002, yielding a total number of 2,765 individual respondents to be examined in this study. The General Social Survey (GSS) is a publicly available dataset that is collected every other year, beginning in 1972, by the National Opinion Research Center (NORC) at the University of Chicago. According NORC, “altogether the GSS is the single best source for sociological and attitudinal trend data covering the United States.” (NORC, 2011). Despite the richness of the GSS data for demonstrating the impact of arts

exposure and artistic expression on civil society, these data have not been previously used to test the hypotheses we have proposed for this study.

The GSS is an appropriate source of data for examining how arts exposure and arts participation impact individuals' contributions to civil society, because it contains a variety of measurable indicators about respondents' exposure to and participation in arts activities, as well as measures of attitudes and behaviors that make up civil society, including social tolerance, altruism, and various measures of civic engagement. The dataset also contains a variety of demographic data for each respondent, allowing us to control for individual, person-level attributes in our analysis. The GSS contains a standard core of demographic, behavioral, and attitudinal questions, plus topics of special interest. Arts exposure and arts participation questions, as well as some of the civic engagement questions are classified as 'topics of special interest' and thus have not been collected every year. Our analysis employs the 2002 dataset because this is the most recent year in which the arts exposure, arts participation, civic engagement, social tolerance, and altruism were collected.

D. Data Analyses

The impact of arts exposure and artistic expression on civil society (civic engagement, social tolerance, and other-regarding behavior) will be estimated using Ordinary Least Squares (OLS) regression. OLS is the appropriate method of estimation since each of our dependent variables will be measured as a scale. All models in this study will be estimated using robust standard errors to correct for heteroskedasticity that is common in cross-sectional analyses. In many of the variables, recodes are necessary in order to make the responses scale-consistent.

Dependent Variables

Three manifestations of civil society make up the dependent variables in our analysis. The first is civic engagement, and four dependent variables will be used to measure individuals' level of civic engagement. Memberships in civic organizations and associations are a classic indicator of civic engagement (Putnam, 1995). The first dependent variable will measure individuals' participation in civic organizations and associations through a survey questions that asks respondents to indicate whether or not they belong to any of the following types of organizations or groups: fraternal groups, service clubs, veterans groups, political clubs, labor unions, sports clubs, youth groups, school service groups, hobby club, nationality groups, farm organization, professional society, church affiliate groups, and informal or other group. This variable can range from 0 to 14, with 0=respondent does not belong to any of these groups, to 14=respondent belongs to all of these types of organizations or groups.

Civic engagement also encompasses volunteer service to nonprofit and civic organizations and causes (excluding arts and cultural organizations). Level of volunteering is measured as the number of organizations the individual reports volunteering for in the last year, including organizations and causes of the following ten types: health care, education, religious organization, human services, environmental, public social benefit organization, political organization, youth development, private or community foundation, and international relief and

development organization. This variable can range from 0 to 10, with 0=respondent has not volunteered for any of these kinds of organizations or causes, to 10=volunteered for all these organizations and causes in the last year.

Another form of civic engagement involves giving to charitable organizations and financially supporting causes in which a person believes. Giving is measured as the number of nonprofit and civic organizations the respondent contributed money to in the past year, including health care, education, religious organization, human services, environmental, public social benefit organization, political organization, youth development, private or community foundation, and international relief and development organization. This variable can range from 0 to 10, with 0=respondent has not contributed money for any of these kinds of organizations or causes in the last year, to 10=contributed money to all these organizations and causes in the last year.

Finally, voting is an important measure of civic engagement. Voting is measured through a survey question asking whether or not the respondent voted in the past presidential election, 0=respondent did not vote, 1= respondent voted. Since this variable departs from the scalar nature of the other variables and is measured dichotomously, logistic regression will be used as the method of analysis for this particular model.

The second set of dependent variables measure respondents' level of social tolerance. Two variables will be used to measure tolerance. The first is created from a question that asks respondents whether or not they would be opposed to the following persons giving a speech in their community: a socialist, anti-religionist, Muslim, homosexual, communist, militarist. This variable will be measured on a scale from 0-6, with higher scores indicating higher social tolerance, and lower scores revealing lower social tolerance. The second measure of tolerance is created from a question that asks whether each of these same persons should be allowed to teach in the public schools, and will be measured on the same scale.

The third set of dependent variables measures 'other-regarding' attitudes and behaviors. The first variable is a scale constructed from seven questions, each of which are measured on a five-point Likert scale ranging from 'strongly agree' to 'strongly disagree.' These questions capturing "other-regarding" attitudes are as follows: people should help others who are less fortunate, those in need have to take care of themselves, assisting people in trouble is very important, people need not overly worry about others, people should take care of one's self and one's family first, should better-off people help those who are less well-off, and it's alright to have friends just because they are of use to respondent. This variable will range from 5-35 with higher values indicating greater attitudes towards others.

Another variable will measure behavior that is other-regarding. This variable is constructed from eight survey questions asking how often the respondent engaged in the following activities in the last year: allowed a stranger to go ahead of them in line, carried a stranger's belongings, donated blood, gave directions to a stranger, loaned someone an item of value, looked after a neighbor's plants, mail, or pets, returned money to a cashier who'd given too much change. Each of these items are measured on a six-point scale ranging from 0=not at all

in the past year, to 5=more than once per week, so the summed measure used in the analysis will range from 0 to 40.

Independent Variables

Our two key independent variables of interest are arts exposure and artistic expression. Arts exposure is measured through a series of survey questions that asked respondents whether they had done any of the following activities in the past year: visited an arts museum, attended a dance performance, or attended an opera, symphony, or classical music performance. Responses to the variables will be summed to create a measure of arts exposure that ranges from 0=have not attended any of these in the past year, to 3=attended all of these in the past year. As our hypotheses above suggest, we believe that higher levels of arts exposure will be positively linked to higher levels of civic engagement, greater social tolerance, and greater attitudes and behaviors that are other-regarding.

The second key independent variable is artistic expression and will be constructed from three questions asking respondents whether they had engaged in any of the following in the past year: made an object of art, performed music, dance, or theater, and played a musical instrument. Responses to these survey items will be summed to create a measure of artistic expression that ranges from 0=have not engaged any of these in the past year, to 3=engaged in all of these in the past year. As our hypotheses above suggest, we believe that higher levels of artistic expression will be positively linked to higher levels of civic engagement, greater social tolerance, and greater attitudes and behaviors that are other-regarding.

Other independent variables included in each the models include standard demographic controls of age, race, sex, income, education, region of country, and marital status.

E. Personnel Capability

The Principal Investigator for the proposed project is Dr. Kelly LeRoux, Assistant Professor in the Department of Public Administration at the University of Illinois at Chicago. Dr. LeRoux has authored 20 peer-reviewed journal articles in top journals within the fields of nonprofit and voluntary studies, public administration, and urban policy. She has also authored several book chapters and edited book. She conducts research on the topics of nonprofit organizations and civic engagement, and has extensive experience with quantitative methods, including several projects that have been externally funded. Anna Bernadska will be the Co-Principal Investigator for this project. Anna is a doctoral student in Public Administration at the University of Illinois at Chicago, and holds a Master's Degree in Arts Management. She has served as an adjunct instructor for courses at Columbia College, a prestigious Arts and Design College in the city of Chicago, and has extensive professional experience working in development for organizations with arts-related missions. Please see attached curriculum vitas for more detailed information about the Principal Investigator and Co-Principal Investigator.

The total funding requested from the NEA for this project is \$21,745, which will be used almost exclusively to support personnel costs. One month full-time summer salary (plus fringe)

is requested for the PI (Kelly LeRoux), who will use this time to clean and pare down the dataset, re-code variables, and to conduct the data analysis. Funds are also requested for a part-time appointment for Anna Bernadska (10 hours per week) as a Graduate Research Assistant in fall semester 2012 (September 1, 2010 through December 31, 2010). This time will be spent creating data tables and illustrations for the paper, drafting the final report for NEA, preparing the ARNOVA presentation, helping to prepare the paper for journal submission, and otherwise helping to disseminate the results. In addition, an in-kind contribution of 80 hours of the PI's time will be contributed to this project in fall 2012 to aid Bernadska in writing the final report to be submitted to NEA and to prepare the paper for submission to an academic journal. There is a grants manager/administrator housed within our own department (Public Administration) at UIC, and a nominal amount of indirect cost recovery funds are requested to help support administrative costs associated with the grant such as completing appointment paperwork, tracking funds, and grant reporting requirements. Please see attached budget for a detailed breakdown of funds requested.

F. Organizational Capability

The Department of Public Administration at UIC serves as a focal point for interaction among faculty, graduate students, scientists, and practitioners on public policy and management issues. Housed in the College of Urban Planning and Public Affairs, the PA Department supports a Ph.D. program in Public Administration and provides both faculty and graduate students with workspace and all necessary equipment for conducting social science research. Additionally, the Department of Public Administration offers workspace for hourly undergraduate students and graduate assistants, and offers private office space for postdoctoral researchers and affiliated faculty working on research projects.

The department benefits from the support and resources of the College of Urban Planning & Public Affairs, including IT support and access to equipment and expertise from researchers at the Science, Technology and Environment Policy Research Laboratory, Data Visualization Laboratory and the Survey Research Laboratory, which are housed in the same building. Examples of the recent projects undertaken by the PA faculty include *Women in Science and Engineering: Network Access, Participation and Outcomes* - A multi-year NSF-funded study to examine the structure of social networks in six fields of science to understand the way in which women enter, participate, and benefit from those social networks, *Patenting Behavior of Academic Scientists and Engineers: A Micro-level Analysis of the Factors that Determine the Production of University Patents*— NSF, and *Nonprofits and Voter Mobilization in the U.S.*, funded by the Center on Philanthropy at Indiana University with sponsorship from the Kresge Foundation.

G. Outline for Research Report

In accordance with the description in the Request for Proposals, the final research report highlighting the results of this study will be 30-50 pages and will contain the following elements:

- An executive summary
- A summary of the analysis conducted, and related findings including data tables
- A conclusions section, including research and/or policy recommendations, based on the findings
- A summary of the methodology used

H. Outcomes and Measurements

The project's outputs will include 1) a research report highlighting the results of this study, 2) a paper submitted to a peer-reviewed journal and 3) a presentation of study results at ARNOVA conference. The project's main outcome will be increased awareness of the impact of the arts on individual-level contributions to civil society. The success of the project will be determined using both formative and summative evaluation measures. Formative evaluation will include progress reports prepared by co-investigators. The external summative evaluation will be conducted by public administration scholars and arts policy researchers. The main indicator of success will be positive peer reviews and the publication of study results in at least one peer-reviewed journal.

I. Schedule of Key Project Dates

If awarded a grant, the work on this project will begin on July 1, 2012. July and August will be spent cleaning up dataset and conducting data analysis. Cleaning the dataset requires paring down the existing data file from the current 2,000 + variables into a manageable number of relevant variable, and doing the necessary variable recodes to make measures scale consistent. Data analysis includes running the various regression models in Stata. It is anticipated that data analysis will be completed by August 31, 2012.

The period of time from September 1, 2012 to December 31, 2012 will be spent writing the final report. This will entail typing up the data tables and interpreting the results to produce a final report of the study's findings in accordance with the format specified. It is anticipated that the final report of 30-50 pages will be completed by December 31, 2012.

J. Plans for Reporting and Disseminating Study Results

We anticipate disseminating our study results through the following venues and timelines:

- Submit final report to NEA no later than December 31, 2012.
- Presentation of study results at Association for Research on Nonprofit Organizations and Voluntary Action (ARNOVA) annual conference in November 2012 in Indianapolis.

- Submit paper to peer-reviewed journal by January 21, 2013. Targeted outlets include the *Journal of Civil Society*, *Nonprofit and Voluntary Sector Quarterly* or *International Journal of Arts Management*.
- Share findings locally with Illinois Arts Council, which is a membership organization that conducts advocacy and provides technical assistance to arts organizations in Chicago and throughout the state of Illinois. The Principal Investigator has close relationships with two staff in the Research Division of the Arts Council, who will be enthusiastic about disseminating our research findings on the impact of arts on civil society to their membership as well as the public.
- Share findings nationally and internationally through professionals associations such as the Association of Arts Administration Educators (AAAE).
- Share with UIC's Center for Policy and Civic Engagement who will publicize through their Civic Web Portal.
- Provide a link to the report on the Principal Investigator's faculty webpage.

K. Plans for Making Report and Data Publicly Accessible

While the data used in our study are already available to the public via NORC's website, we will certainly make available the cleaned up, re-coded, and pared down version of the dataset that we used to conduct that analyses. We believe the best way to communicate to readers that these data are available is to provide an endnote in the final report with the authors' contact information, encouraging readers to contact the PI for the dataset.

References

Anheir, Helmut K. (2005). *Nonprofit Organizations: Theory, Management, Policy*. New York, NY: Routledge Press.

Carmen, Malena and Finn Heinrich Volkhart (2007). Can We Measure Civil Society? A Proposed Methodology for International Comparative Research, *Development in Practice*, 17 (3): 338-352.

Foley, Michael W., and Bob Edwards (1996). The Paradox of Civil Society, *Journal of Democracy*, 7: 38-52.

Jones, Keely (2006). Giving and Volunteering as Distinct Forms of Civic Engagement: The Role of Community Integration and Personal Resources in Formal Helping, *Nonprofit and Voluntary Sector Quarterly*, 35 (2): 249-266.

Kwak, Nojin, Dhavan V. Shah, and R. Lance Holbert (2004). Connecting, Trusting, and Participating: The Direct and Interactive Effects of Social Associations, *Political Research Quarterly*, 57: 643-652.

Merriam Webster Dictionary (2010). <http://www.merriam-webster.com/cgi-bin/book.pl?c11.htm&1>, date accessed September 22, 2010.

National Opinion Research Center (2011). <http://www3.norc.org/GSS+Website/>, date accessed October 29, 2011.

Newton, Kenneth (2001). Trust, Social Capital, Civil Society, and Democracy, *International Political Science Review*, 22: 201-214.

Putnam, Robert D. (1995). Bowling Alone: America's Declining Social Capital, *Journal of Democracy*, 6: 65-78.

Sievers, Bruce (2009). What Is Civil Society? Grantmakers in the Arts *Reader*, 20 (1). Retrieved from <http://www.giarts.org/article/what-civil-society>.

Attachment: Project Budget Form

Attachment: Biographies of Key Personnel

Attachment: Availability of Data in the Public Domain

Arts Education and Positive Youth Development: Cognitive, Behavioral, and Social Outcomes of Adolescents who Study the Arts

a. Research Questions

The purpose of this study is to examine the value and positive impact of the arts by analyzing the cognitive, behavioral, and social outcomes of adolescents who study the arts in comparison with their non-arts peers using data from the National Longitudinal Study of Adolescent Health (“Add Health”). Study of the arts in schools is likely to be a venue for positive youth development, and I hypothesize that when statistical control for preexisting, observable differences between arts and non-arts students is applied by matching arts students to non-arts students who most closely resemble them on a series of observable covariates using propensity scores, arts students will have outcomes that are significantly more positive than their non-arts peers.

The study seeks to answer the following research questions:

1. What are the demographic characteristics of students who choose to formally study the arts in U.S. high schools?
2. How do adolescents who formally study the arts in schools differ from their non-arts peers on key indicators of positive youth development during adolescence?
 - a. School engagement/School attachment
 - b. Psychological adjustment
 - c. Delinquency
 - d. Involvement in risky behaviors
 - e. Substance Use (drugs/tobacco/alcohol)
 - f. Relative riskiness of closest peers
3. How do adolescents who formally study the arts in schools differ from their non-arts peers on developmental outcomes in young adulthood and beyond?
 - a. High school graduation
 - b. College attendance and completion
 - c. Total years of educational attainment
 - d. Occupational/Career status at age 25-26
 - e. Civic engagement
 - f. Psychological adjustment
 - g. Involvement with Drugs/tobacco/alcohol

The value and positive impact of arts study on children and adolescents is often self-evident to artists, musicians, and arts educators. Yet, the arts community is frequently called upon to justify the expenses of arts education by providing evidence that engaging in arts education and arts experiences make a meaningful, positive difference in the lives of secondary students. Often, this research has focused on the associations between arts study and traditional measures of academic achievement (e.g., Catterall, 1997, 2009; Deasy, 2002; Gouzouasis, Guhn, & Kishor, 2007; Helmrich, 2010; Miksza, 2007, 2010; Morrison, 1994; Schellenberg, 2005; Southgate & Roscigno, 2009). Research of this type has not yet been able to establish a causal link between arts study and increased academic performance. The observed association between arts study and academic performance has recently been called into question by research suggesting that the types of students who elect arts study are *initially* more likely to have higher academic achievement than their peers who do not elect the arts (Elpus, 2011; Elpus & Abril, 2011; Fitzpatrick, 2006; Kinney, 2008; Winner & Cooper, 2000).

Even though research on the academic benefits of arts study has yet to be fully settled, adolescent arts students frequently report to researchers that they highly value their artistic pursuits and that their arts study becomes an important context to help them navigate the challenges of adolescence (Adderley, Kennedy, & Berz, 2003; Barber, Stone, & Eccles, 2005; Fredricks et al., 2002; Graham, 2003). Adolescent developmental psychologists confirm that involvement in organized activities—broadly defined, and nearly always including arts education activities among those studied—is a generally positive context for youth development that promotes prosocial behaviors and successful developmental outcomes for all students, including those considered at-risk (Barber, Stone, & Eccles, 2005; Barber, Stone, Hunt, & Eccles, 2005; Bartko & Eccles, 2003; Mahoney, Larson, Eccles, & Lord, 2005; Nurmi, 2004).

The existing large-scale research on the value and positive impact of adolescent involvement in organized activities tends either to focus on those activities broadly defined (considering school-based clubs and service organizations alongside arts and athletics) or focuses exclusively on sports participation (Feldman & Matjasko, 2005). The proposed study will be the first use of the National Longitudinal Study of Adolescent Health (“Add Health”) to specifically examine the developmental outcomes and trajectories of adolescents who formally study the arts as compared to their non-arts peers, including those who are and are not involved in other non-arts activities at school. The proposed study complements the existing qualitative research literature on the developmental outcomes of arts students (e.g., Adderley et al., 2003; Fredricks et al., 2002; Halverson, 2010) in its attempt to determine whether the benefits of arts study demonstrated in small samples “scale up” to a large, nationally representative, longitudinal sample of adolescents.

Empirically linking arts study to positive youth development on a national scale, using the large sample size afforded by the Add Health dataset and with control for potential selection biases through propensity score matching and stratification, is an important first step to understand the causal impact of arts study on human development. A deeper understanding of both cognitive, behavioral, and social benefits of arts study to individual students can serve to better inform educational policymakers as they consider their support for arts education in schools. By linking arts study to outcomes broader than the standardized test scores traditionally used in this type of research, policymakers will be provided with a more ecologically valid understanding of the value and positive impact of arts study to adolescents. Broadening the evidence base upon which educational policymakers rely to determine the worth of public investments in arts education can serve to further solidify the place of the arts as core subjects in American education.

b. Research Design

The proposed study will be carried out in two distinct phases. The first phase, designed to answer the first Research Question, will be a descriptive study that seeks to determine what the demographic characteristics of students who elect formal arts education coursework in U.S. secondary schools. These characteristics will be analyzed cross-sectionally at Wave I, the first data collection point for Add Health, to serve as a baseline for future comparisons with data collected at later points. The examined characteristics will include: race/ethnicity, sex, socioeconomic status, family composition, native language, prior academic achievement, relative riskiness of peers, use of unstructured time, and depression scores based on Add Health’s implementation of the Center for Epidemiological Studies–Depression Scale (CES-D).

The second phase of the study will be designed as matched quasi-experimental study using propensity score stratification on observables to adjust for selection bias. Since selection into arts study cannot be manipulated in observational studies such as this one, I will use propensity score stratification to reduce selection bias in the estimates for the effects of arts study on the outcomes of interest. Results from the descriptive analysis in phase one will be used to create a propensity score model (Rosenbaum & Rubin,

1983) for selection into arts study. Using the propensity score model, I will estimate a propensity score for selection into arts study for each sample member in the Add Health dataset. The total Add Health sample will then be stratified into at least five propensity score strata, because prior research has shown that five strata are enough to reduce nearly all of the selection bias present in observational studies (Steiner, Cook, Shadish, & Clark, 2010). Research questions (2) and (3) will be answered using regression analysis comparing arts and non-arts students within propensity score strata. The treatment effects for arts study found within each propensity score stratum will be averaged to estimate the overall effect of arts study on the outcomes and indicators of interest (Murnane & Willett, 2011).

c. Data Sources

This study will analyze data from the National Longitudinal Study of Adolescent Health (“Add Health”) as well as the dataset of complete high school transcripts and related education data of Add Health participants known as the Adolescent Health and Academic Achievement (AHAA) study. Add Health was a project of the Carolina Population Center at the University of North Carolina and supported by three federal grants. The education data comprising AHAA was collected by the Population Research Center of the University of Texas at Austin.

Sample Characteristics of Add Health

Add Health is a major longitudinal study of a nationally representative sample ($N = 20,745$) of adolescents enrolled in grades 7 through 12 during the 1994-1995 academic year. Adolescents were re-surveyed in 1996 ($N = 14,738$) at Wave II, as young adults in 2001-02 ($N = 15,197$) at Wave III, and as adults in 2007-08 ($N = 15,701$) at Wave IV. Ancillary data were collected from parents of sample members ($N = 17,670$) at Wave I and from romantic partners of sample members ($N = 1,507$) at Wave III.

The initial nationally representative sample of students was drawn using multistage survey sampling techniques. The first stage drew a sample of 80 high schools with unequal probability of selection; 52 “feeder” middle schools of the 80 selected high schools were also selected. Prior to the selection of the sample of schools, the sampling frame was stratified by region of the country, urbanicity, school size, school type, and ethnic makeup. The stratification, when properly accounted for in the analyses, ensures that the sample is representative of schools in the United States with respect to those characteristics.

Sample Characteristics of the Adolescent Health and Academic Achievement Study

At the time of Wave III data collection, when all Add Health sample members had graduated from high school, Add Health sample members were provided with a release form allowing the Population Research Center at the University of Texas, Austin to receive a copy of their complete high school transcript for coding and inclusion in a supplementary Add Health dataset called the Adolescent Health and Academic Achievement Study (AHAA). Roughly 91% of Wave III respondents signed the release form ($N = 14,070$), and complete high school transcripts were obtained for most respondents ($N =$ approximately 12,250). Ancillary data regarding school policies, grading practices, and special programs offered were collected from the schools providing the transcript.

Transcripts were coded using the same procedures followed by the U.S. Department of Education National Center for Education Statistics (NCES) for the National Education Longitudinal Study of 1988 (NELS) and the National Assessment of Educational Progress (NAEP) High School Transcript Studies.

Variables to be Employed in the Study

Demographic variables, quality of peer context, prior academic achievement, and indicators of positive youth development and young adult outcomes will be taken from variables available in the main Add Health dataset. These include (with Add Health variable names indicated in parentheses):

Demographics and Other Covariates for Research Question 1 and Propensity Score Models

Sex (S1), Race/ethnicity (S4, S5, S6A-E, S7, S8, H1GI4, H1GI5, H1GI6, H1GI7, H1GI8), Native language (H1GI10), Prior academic achievement based on self-reported academic subject grades (S10A-D), Family composition (S11, S17, S26, S27), Socioeconomic status (S12, S14, S15, S18, S20, S21), Involvement in non-arts clubs/activities/sports (S44, S44A1-S44A33), Use of unstructured time (S47, H1DA1-11), Risky behaviors reported prior to arts study (S59A-G), School attachment at pretest (S62B, S62E, S62I, S62L, S62R)

Indicators of Positive Youth Development During Adolescence

School attachment at Wave II (H2ED15-20), Psychological adjustment during adolescence (H2FS1-19, H2PF12-35, H2SU1-9), Delinquency (H2ED2, H2ED3, H2ED5, H3ED33, H2DS1-14), Involvement in risky behaviors (H2MO1-16), Substance Use (H2TO1-68), Relative riskiness of closest peers (H2TO10, H2TO41, H2TO48, H2SU4), Positive Influences (H2PR1-8)

Young Adult Outcomes

High school graduation (H4ED1), College attendance and completion (H4ED2), Total years of educational attainment (H4ED2), Highest educational expectation (H4ED9), Occupational/Career status at age 25-26 (H4LM1, H4LM11, H4LM14, H4LM18, H4LM23, H4LM26, H4LM27, H4EC2), Psychological adjustment (H4MH1-29, H4SE1-3, H4PE1-41), Substance Use (H4TO1-120)

Indicators of Formal Arts Study

Students who have earned at least one credit of arts coursework as indicated on their high school transcript as collected by the Adolescent Health and Academic Achievement study will be considered “arts students” for analyses in which arts study is conceptualized dichotomously. The total number of credits of arts coursework appearing on the transcripts will be used in analyses where arts study is conceptualized as a continuous measure or “dosage.”

d. Data Analyses

The first phase of data analysis will involve the identification of Add Health sample members who earned credit for formal arts study in their high schools. These students will be identified using the high school transcript data collected as part of AHAA, the ancillary education data complement to Add Health. The procedure will essentially follow the same one used by Elpus (2011), as diagrammed below in Figure 1. Transcripts in the AHAA data are coded using the U.S. Department of Education’s “Classification for Secondary School Courses” (CSSC) system. Elpus (2011) used the CSSC codes to “flag” students who had pursued music courses in high school; that method can be easily expanded to include the codes for other visual and performing arts courses to “flag” students in Add Health who should be considered “arts students” for the purposes of this study. These “flags” determine group membership, arts student or non-arts student.

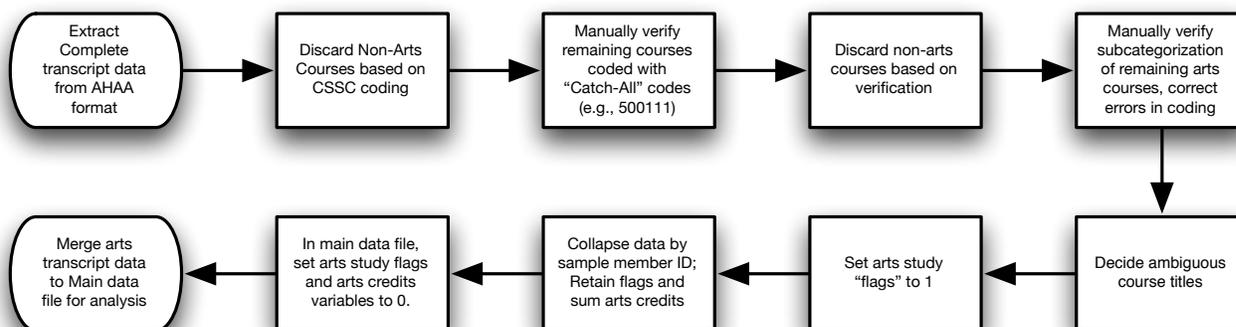


Figure 1. Elpus (2011) method of identifying Arts Students from transcript data as it will be used in this study

Once the arts students and non-arts students have been identified in the data, descriptive analyses to answer Research Question (1) will be carried out. Demographic data will be reported using proportions for sex, race/ethnicity, native language, and family composition. Means and standard deviations will be reported for measures of prior academic achievement, socioeconomic status, involvement in other clubs/sports, use of unstructured time, risky behaviors, and school attachment at Wave I. Comparisons between arts and non-arts students in this phase of the study will be carried out with caution, as selection bias may influence the results of comparative analyses between the groups at this stage. However, those variables where significant *a priori* differences between arts and non-arts students exist will be used to develop the propensity score model for the second phase of the analysis.

In the second phase, to answer Research Questions (2) and (3), a propensity score will be estimated for each Add Health sample member. Sample members will be divided into at least five strata based on their propensity score such that arts and non-arts students in each strata will be as similar to each other on the observed covariates that make up the propensity score as possible. This matching by propensity score helps eliminate the bias that would otherwise be present due to unobservable selection into arts study. Fixed effects regression, which accounts for the nesting of sample members within initial schools, will be employed to determine what significant differences in the outcomes of interest exist between arts students and non-arts students. The effect of arts study found in each stratum will be averaged to determine an overall average treatment effect for the impact of arts study on the social, cognitive, and behavioral outcomes in the Research Questions. Standard errors for the regression estimates will be adjusted to properly account for the complex sampling structure in Add Health. The regression estimates will be based on the theoretical model presented in Equation (1):

$$Outcome_{ij} = \alpha_j + \beta ArtsStudy_{ij} + \varepsilon \quad (1)$$

Here, $Outcome_{ij}$ represents the cognitive, behavioral, or social outcome of interest for the i th student in the j th school, α_j represents the school-level fixed effect for school j , $ArtsStudy_{ij}$ represents a dichotomous indicator of student i in school j being an arts or non-arts student, and ε represents the error in the model. The estimate of interest is β , which represents the effect of arts study on the outcome. This equation will be estimated for propensity-score matched Add Health sample members in at least five propensity score strata. This matching will help reduce the selection bias in the estimate of β on the observable covariates included in the propensity score. The five estimates of β from each stratum will be averaged to obtain the study's estimate of the overall average treatment effect of Arts Study on the developmental outcomes and indicators of interest. During adolescence, the outcomes are: School engagement/School attachment, Psychological adjustment, Delinquency, Involvement in risky behaviors, Substance Use, and Relative riskiness of closest peers, all of which were measured in Wave II of Add Health. In young adulthood, the outcomes of interest are High school graduation, College attendance and completion, Total years of educational attainment, Occupational/Career status at age 25-26, Civic engagement, Psychological adjustment, and Substance use, all of which were measured in Waves III and IV of Add Health.

I hypothesize that, even when controlling for selection with propensity score stratification, that students of the arts will have developmental outcomes and indicators that are more positive than their non-arts peers. Thus, I reasonably expect the average treatment effects (the mean of all five strata β s) to be positive and statistically significant.

e. Personnel Capability

Kenneth Elpus, Ph.D., will serve as the principal investigator for this study and devote a 33.33% level of effort to the funded portion of the project, consisting primarily of three months of 100% summer effort during the data analysis phase of the project. An emerging researcher in the field of music education, he is experienced in the use of large datasets for arts education policy research. Dr. Elpus was lead author and

data analyst for a collaborative study that analyzed data from ELS:2002, which was published in the July 2011 issue of the *Journal of Research in Music Education* (Elpus & Abril, 2011). His dissertation, accepted by Northwestern University in June 2011, made extensive use of data from the Education Longitudinal Study of 2002 (ELS:2002) and the National Education Longitudinal Study of 1988 (NELS:88). He will present a portion of his dissertation based on both ELS and NELS data at the upcoming 2012 Annual Meeting of the American Educational Research Association (AERA). Based primarily on the recognized strength of Dr. Elpus's peer reviewed publications and presentations within the field of music education, he was tapped to serve as a proposal reviewer for AERA by the association's music education subgroup.

Dr. Elpus's research training at Northwestern University included coursework in research design with Thomas D. Cook, one of the most highly respected and often-cited research methodologists in all of social science. Dr. Elpus's training in the analysis of large datasets is most directly attributable to his work with economist of education David N. Figlio, a member of Dr. Elpus's dissertation committee with whom he pursued study in regression analysis. Dr. Elpus also has advanced statistics preparation with Larry Hedges and coursework in applying advanced quantitative research methodologies to the study of music and arts education was with Peter R. Webster. Especially relevant to this study, Dr. Elpus's primary training in the study of adolescent development was with developmental psychologist Barton Hirsch.

f. Organizational Capacity

The University of Maryland, College Park (UMD) is the flagship institution of the University System of Maryland. Classified by the Carnegie Foundation for the Advancement of Teaching as a "Research University/Very High Research Activity" (RU/VH), the University of Maryland is a member of institution of the American Association of Universities (AAU), which comprises the nation's top research universities. Researchers in the University of Maryland School of Music's Music Education division include senior scholars in the field such as Michael P. Hewitt, Ph.D. and Janet Montgomery, Ph.D., as well as emerging junior scholars such as Bruce Carter, Ph.D.

University-supplied office space, computing equipment, statistical software, and world-class library resources in both the University's main library and the specialized Michelle Smith Performing Arts Library support Dr. Elpus's research agenda at the University. Analyses for the proposed study will be conducted using StataCorp's Stata statistics software, version 12, running on latest generation Apple Macintosh hardware.

Recent research projects completed by UMD Music Education faculty:

Elpus & Abril (2011) – an analysis of the Education Longitudinal Study of 2002, examining the demographic profile of high school music ensemble students

<http://jrm.sagepub.com/content/59/2/128.short>

Elpus (2011) – an analysis of the Education Longitudinal Study of 2002 and the National Education Longitudinal Study of 1988 examining academic outcomes of music and non-music students and analyzing education policy issues in music education - <http://gradworks.umi.com/34/56/3456550.html>

Hewitt (2011)– study of the influence of self-evaluation instruction on music performance and evaluation accuracy - <http://jrm.sagepub.com/content/59/1/6.short>

Carter (2010) – study of the compositional identity of undergraduate music composition majors
<http://goo.gl/RtEHk>

g. Outline for Research Report

The research report that will be created as a result of the proposed study will be a multichapter monograph. It will roughly follow the draft outline below:

- I. Preface
- II. Executive Summary
- III. Introduction
- IV. Chapter 1. Casting Arts Education as a Context of Positive Youth Development: Past Research and Theory
- V. Chapter 2. Who Studies the Arts in U.S. Secondary Schools? Characteristics of the Arts Students in the National Longitudinal Study of Adolescent Health.
 - a. The Add Health Dataset
 - i. Description of the National Longitudinal Study of Adolescent Health
 - ii. Add Health school transcript data analysis procedures
 - iii. Criteria for designation as an “arts student”
 - b. Characteristics of Performing Arts Students
 - i. Music
 - ii. Theatre
 - iii. Dance
 - c. Characteristics of Visual Arts Students
 - i. Studio Art
 - ii. Photography
- VI. Chapter 3. The Development of Adolescent Arts Students: Indicators of Positive Youth Development Among Arts Students in the U.S and their Outcomes in Young Adulthood
 - a. Performing Arts Students
 - i. Music
 1. Cognitive Outcomes
 2. Social Outcomes
 3. Behavioral Outcomes
 - ii. Theatre
 1. Cognitive Outcomes
 2. Social Outcomes
 3. Behavioral Outcomes
 - iii. Dance

- 1. Cognitive Outcomes
- 2. Social Outcomes
- 3. Behavioral Outcomes
- b. Visual Arts Students
 - i. Studio Art
 - 1. Cognitive Outcomes
 - 2. Social Outcomes
 - 3. Behavioral Outcomes
 - ii. Photography
 - 1. Cognitive Outcomes
 - 2. Social Outcomes
 - 3. Behavioral Outcomes

VII. Chapter 4. Comparing Arts Students to the Non-Arts Peers on Indicators of Positive Youth Development

- a. Arts vs. Non-Arts Comparisons
 - i. Arts students compared to non-arts students uninvolved in other activities
 - ii. Arts students compared to non-arts athletes
 - iii. Arts students compared to non-arts students involved in nonathletic activities
- b. Comparisons with Multiply Involved Arts Students
 - i. Arts athletes vs. Non-arts athletes
 - ii. Arts students involved in nonathletic activities vs. non-arts students involved in nonathletic activities

VIII. Chapter 5. Conclusions and Next Steps

- a. Implications for Arts Education Policy
- b. Implications for Arts Educators
- c. Implications for Future Research

IX. Appendix: Detailed Methodology

h. Outcomes and Measurements

The proposed study directly addresses the National Endowment for the Art goal of Enhancing Knowledge and Understanding through expanding and promoting evidence of the value and impact of the arts. Anecdotally, artists and arts educators often report that their arts study was an important—if not salvific—part of their adolescent experience. And yet, there is no formalized research focusing specifically on the developmental outcomes and indicators of positive youth development for students who study the arts. The proposed study attempts to fill this gap in the research literature, and in doing so, directly addresses the NEA’s goal by increasing the evidence base upon which the value and positive influence of the arts to adolescents is understood. This goal can be measured both through the publicity the results of the proposed study garner and whether future research cites back to this study as a foundational element in the research literature.

i. Schedule of key project dates

The project will progress as follows:

May 1, 2012	Grant funds released to University of Maryland Contract to obtain Add Health data executed, data fee paid
June 1 – August 28, 2012	Grant support period for Data Analysis. 100% summer effort from P.I.
July 1, 2012	Submission of preliminary findings for possible presentation at the 2013 Annual Meeting of the American Educational Research Association
September 1, 2012	Drafting of Final Research Report Begins
December 1, 2012	Delivery of Final Research Report to National Endowment for the Arts
December 15, 2012	Submission of article-length research reports to appropriate journals for possible publication

j. Plans for reporting and disseminating the study results

In addition to the required 30-50 page Final Research Report submitted to the National Endowment for the Arts, the study will be submitted for presentation at appropriate national scientific meetings. The first choice for such presentation will be the 2013 Annual Meeting of the American Educational Research Association, the largest and most prominent national scientific organization dedicated toward advancing research on education, education policy, teaching, and learning. Research presented at AERA is highly visible and the presented papers are often indexed in the Educational Resources Information Center (ERIC) project of the U.S. Department of Education. ERIC's holdings are searchable via Google and Google Scholar and the research presented at AERA is often later published in major journals.

Article-length segments of the study will also be submitted for possible publication in relevant top tier journals. The target journals for this research study include the *Journal of Youth and Adolescence*, the *Journal of Adolescence*, the *Journal of Research in Music Education*, and *Arts Education Policy Review*.

k. Plans for making the report and data accessible to the public

While the version of the National Longitudinal Study of Adolescent Health data that will be analyzed in this study is restricted-use, there is a subset of Add Health data from a random selection of participants that is publicly available, so interested parties can get a sense of what other information is in the Add Health dataset. The "flags" indicating which Add Health sample members were arts students will be derived entirely from restricted-use data, however, and data security procedures in place due to the sensitive and personally identifiable information contained in Add Health prevent the release of those flags, as well as the remainder of the dataset to the public.

However, the University of Maryland maintains an open access digital archive, called the Digital Repository at the University of Maryland (or DRUM). DRUM is freely available to the public and indexed by Google Scholar. If the NEA allows, I intend to deposit a copy of the final research report into DRUM, which will provide another open access avenue for dissemination beyond the NEA's own publication of the report. Additionally, the UMD Communications office regularly informs the press of research advances that take place at the University, and these avenues will also be leveraged to increase awareness of the study.

References

- Adderley, C., Kennedy, M., & Berz, W. (2003). "A home away from home": The world of the high school music classroom. *Journal of Research in Music Education*, 51(3), 190-205. doi: 10.2307/3345373
- Barber, B. L., Stone, M. R., & Eccles, J. S. (2005). Adolescent participation in organized activities. In K. A. Moore & L. H. Lippman (Eds.), *What do children need to flourish?: Conceptualizing and measuring indicators of positive development* (pp. 133-146). New York, NY: Springer.
- Barber, B. L., Stone, M. R., Hunt, J. E., & Eccles, J. S. (2005). Benefits of activity participation: The roles of identity affirmation and peer group norm sharing. In J. L. Mahoney, R. W. Larson, & J. S. Eccles (Eds.), *Organized activities as contexts of development: Extracurricular activities, after-school and community programs* (pp. 185-210). Mahwah, NJ: Lawrence Erlbaum Associates.
- Bartko, W. T., & Eccles, J. S. (2003). Adolescent participation in structured and unstructured activities: A person-oriented analysis. *Journal of Youth and Adolescence*, 32(4), 233-241. doi: 10.1023/A:1023056425648
- Carter, B. A. (2010). "And that is why girls do not compose": A qualitative examination of undergraduate compositional identity. In L. K. Thompson & M. R. Campbell (Eds.), *Issues of identity in music education* (pp. 65-81). Charlotte, NC: Information Age Publishing.
- Catterall, J. S. (1997). *Involvement in the arts and success in secondary school*. Washington, DC: Americans for the Arts. Retrieved from <http://goo.gl/JLuvd>
- Catterall, J. S. (2009). *Doing well and doing good by doing art: A 12-year national study of education in the visual and performing arts*. Los Angeles, CA: I-Group Books.
- Deasy, R. (Ed.). (2002). *Critical links: Learning in the arts and student academic and social development*. Washington, DC: Arts Education Partnership.
- Elpus, K. (2011). *Justifying music education: Econometric analyses of issues in music education policy* (Doctoral dissertation). Retrieved from ProQuest Dissertations and Theses database. (AAT 3456550)
- Elpus, K., & Abril, C. R. (2011). High school music ensemble students in the United States: A demographic profile. *Journal of Research in Music Education*, 59(2), 128-145. doi: 10.1177/0022429411405207
- Feldman, A. F., & Matjasko, J. L. (2005). The role of school-based extracurricular activities in adolescent development: A comprehensive review and future directions. *Review of Educational Research*, 75(2), 159-210. doi: 10.3102/00346543075002159
- Fitzpatrick, K. R. (2006). The effect of instrumental music participation and socioeconomic status on Ohio fourth-, sixth-, and ninth-grade proficiency test performance. *Journal of Research in Music Education*, 54(1), 73-84. doi: 10.1177/002242940605400106
- Fredricks, J. A., Alfeld-Liro, C., Hruda, L. Z., Eccles, J. S., Patrick, H., & Ryan, A. M. (2002). A qualitative exploration of adolescents' commitment to athletics and the arts. *Journal of Adolescent Research*, 17(1), 68-97. doi: 10.1177/0743558402171004
- Gouzouasis, P., Guhn, M., & Kishor, N. (2007). The predictive relationship between achievement and participation in music and achievement in core Grade 12 academic subjects. *Music Education Research*, 9(1), 81-92.
- Graham, M. (2003). Responding to the demise of adolescent artmaking: Charting the course of adolescent development in an exceptional art classroom. *Studies in Art Education*, 44(2), 162-177.
- Halverson, E. R. (2010, May). *Artistic production processes as venues for positive youth development*. Paper presented at the Annual Meeting of the American Educational Research Association, Denver, CO.
- Helmrich, B. H. (2010). Window of opportunity?: Adolescence, music and algebra. *Journal of Adolescent Research*, 25(4), 557-577. doi: 10.1177/0743558410366594
- Hewitt, M. P. (2011). The impact of self-evaluation instruction on student self-evaluation, music performance, and self-evaluation accuracy. *Journal of Research in Music Education*, 59(1), 6-20. doi: 10.1177/0022429410391541
- Kinney, D. W. (2008). Selected demographic variables, school music participation, and achievement test scores of urban middle school students. *Journal of Research in Music Education*, 56(2), 145-161. doi: 10.1177/0022429408322530
- Mahoney, J. L., Larson, R. W., Eccles, J. S., & Lord, H. (2005). Organized activities as development contexts for children and adolescents. In J. L. Mahoney, R. W. Larson, & J. S. Eccles (Eds.), *Organized activities as contexts of development: Extracurricular activities, after-school and community programs* (pp. 3-22). Mahwah, NJ: Lawrence Erlbaum Associates.
- Miksza, P. (2007). Music participation and socioeconomic status as correlates of change: A longitudinal analysis of academic achievement. *Bulletin of the Council for Research in Music Education*, 172, 41-58.
- Miksza, P. (2010). Investigating relationships between participation in high school music ensembles and extra-musical outcomes: An analysis of the Education Longitudinal Study of 2002 using a bioecological development model. *Bulletin of the Council for Research in Music Education*, 186, 7-25.
- Morrison, S. J. (1994). Music students and academic growth. *Music Educators Journal*, 81(2), 33-36. doi: 10.2307/3398812
- Murnane, R. J., & Willett, J. B. (2011). *Methods matter: Improving causal inference in educational and social science research*. New York, NY: Oxford University Press.
- Nurmi, J.-E. (2004). Socialization and self-development. In R. M. Lerner & L. Steinberg (Eds.), *Handbook of adolescent psychology* (pp. 85-124). Hoboken, NJ: John Wiley & Sons.
- Rosenbaum, P. R., & Rubin, D. B. (1983). The central role of the propensity score in observational studies for causal effects. *Biometrika*, 70(1), 41-55. doi: 10.1093/biomet/70.1.41
- Schellenberg, E. G. (2005). Music and cognitive abilities. *Current Directions in Psychological Science*, 14(6), 317-320.
- Southgate, D. E., & Roscigno, V. J. (2009). The impact of music on childhood and adolescent achievement. *Social Science Quarterly*, 90(1), 4-21. doi: 10.1111/j.1540-6237.2009.00598.x
- Steiner, P. M., Cook, T. D., Shadish, W. R., & Clark, M. H. (2010). The importance of covariate selection in controlling for selection bias in observational studies. *Psychological Methods*, 15(3), 250-267. doi: 10.1037/a0018719
- Winner, E., & Cooper, M. (2000). Mute those claims: No evidence (yet) for a causal link between arts study and academic achievement. *Journal of Aesthetic Education*, 34(3-4), 11-75.

Project Narrative

Understanding Artistic Location Patterns and their Relationship to Neighborhood Development: A time series cross-sectional analysis of 30 US cities

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Elizabeth Currid-Halkett, Co-Principal Investigator, University of Southern California

a. Research questions

This research will examine the neighborhood attributes that attract artists and artistic businesses across a range of different types of cities. We will uncover if and how artistic location preferences have changed over time and identify variations by place and context. By conducting a time-series analysis, we will attempt to determine if correlations exist between artistic presence and key variables associated with neighborhood development (e.g. rents, household income, education levels). To date, there is virtually no literature that comparatively analyzes artistic location patterns across a range of different places and time periods, yet this knowledge is essential to fostering a deeper understanding of where artists choose to live and work and, ultimately, to identify where and under what conditions they make the greatest social and economic impact. Moreover, this research will enable policy-makers to provide more informed and targeted means of supporting the arts.

Recent research asserts that the arts and artists provide important social and economic benefits to struggling neighborhoods (Currid, 2009; Grodach, 2010, 2011; Markusen and Gadwa, 2010; Stern and Seifert, 2010). According to this work, artists stimulate neighborhood economic revitalization through the establishment of retail and creative businesses, the reuse of vacant residential and commercial buildings, and the retention of local dollars in the economy (Markusen and Schrock, 2006). In addition, “cultural clusters” are found to enhance community participation, cross-cultural engagement, and improve neighborhood quality of life (Stern and Seifert, 2010). While such work documents the important role of artists in positive neighborhood change, much less is known about the specific location preferences of artists and how these preferences have changed over time. Further, we possess very little comparative work that identifies how the presence of artistic industries influences neighborhood development. Addressing these research gaps is crucial to capture and demonstrate the value of the arts and artists in US life. Therefore, this research project will answer the following questions:

RQ1: How have the location preferences of artists and artistic businesses changed over time by neighborhood attributes and by city size?

RQ2: What types of neighborhood attributes are associated with the presence of artists and artistic businesses?

RQ3: How do the presence of artistic industries influence or relate to artist location choices and development processes?

Literature Review: The Location Preferences of Artists and Artistic Businesses

In considering the location preferences of artists, prior research has emphasized three broad features at the neighborhood level: affordable rents, neighborhood character, and characteristics of living and work space. In this regard, numerous case studies of gentrification demonstrate that artists are not simply attracted by cheap rents alone, but by places that appeal to the “artistic habitus” or a taste and lifestyle rooted in the aesthetic of older industrial neighborhoods that contain buildings with historic architecture and adaptable, open floor plans and which are typically found in central city locations (Ley, 2003; Lloyd, 2006; Zukin, 1982). Additionally, a fairly diverse literature points to the importance of city distinctiveness and physical and social diversity in attracting concentrations of artistic activity (Florida, 2002; Smit, 2011; Stern and Seifert, 2010). According to Richard Lloyd (2006), artists are particularly attracted by the “street level diversity” of neighborhoods with significant minority populations and that tend to possess above average levels of poverty and crime not simply because they are affordable, but because such places serve as a mark of social status and distinction. Moreover, artists are considered to draw inspiration from such neighborhoods because they provide material and symbolic resources for creative activity (Ley, 2003; Lloyd, 2006).

While this work is helpful in identifying neighborhood qualities that attract artists, it runs the risk of stereotyping artists as a homogenous group that primarily seeks out troubled neighborhoods for their aesthetic benefit, which inevitably leads to the gentrification of these areas. In contrast, other recent research points to the strong community benefits and social interactions that occur in places with sizeable concentrations of artists and arts activity, though this work is limited in that it is based on case studies of single cities (Grodach, 2011; Markusen and Johnson, 2006; Stern and Seifert, 2010).

Another significant factor employed to explain the location preferences of artists and arts-related businesses derives largely from the economic geography literature on industrial districts. According to this work, specialized and complementary firms cluster to take advantage of labor pools and other industry-specific resources and efficiencies (Scott, 2000; Storper, 1997). In relationship to the arts, this work has focused on demonstrating the importance of neighborhood-level features that enhance the ability of artists to tap into supportive social networks; to share supplies, information, and ideas; and engender community support (Currid, 2007, 2009; Grodach, 2011; Lloyd, 2006; Markusen and Schrock, 2006; Neff et al., 2005). Further, artists and artistic industries are found to locate near concentrations of artistic venues and specialized institutions (e.g. nightclubs, art galleries, art spaces, design schools) to gain access to their consumer base, industry gatekeepers, and potential employment and contract opportunities (Currid and Williams, 2010; Lloyd, 2006). Other research, such as Currid’s (2006) study of arts industries in New York, shows that artistic activity tends to co-locate with specific “non-artistic” industries. As such, another potential factor influencing artistic location patterns is attributed to aspects of the regional economic base. Finally, in their study of artistic location patterns at the regional level, Markusen and Schrock (2006) find that key cultural economy hubs (Los Angeles, New York and San Francisco) served as artistic magnets through the 1990’s while select mid-sized cities experienced growth in particular occupations. More recently, in a study of artistic and cultural occupations during recession, Grodach and Seman (2011) found that a handful of mid-

sized cities experienced pronounced growth while the leading centers saw their artistic advantage erode.

While both streams of research help direct us toward the attributes that influence the location preferences and clustering of artists and artistic businesses, each suffer from crucial shortcomings. First, while often in-depth, this research is predominately based on single case studies and, where multi-city studies have been conducted, these focus on data at the regional level alone. As a result, we lack a deep understanding of the fine-grained details that exist within and between places. Second, the existing work predominately focuses on large cities and cultural economy hubs (e.g. New York, Los Angeles, Chicago, San Francisco). We question the generalizability of such cases to the majority of the US where different processes and trends may be at work. Further, little to no research analyzes if and how artistic preferences change over time. Finally, we have yet to understand if there are larger patterns in how artists more generally locate and the relationship to neighborhood development.

In sum, we lack research that 1) attempts to build knowledge of artistic location decisions based on comparative data 2) across different periods of time and 3) across a range of different places at the neighborhood level, both within and outside the traditional hubs of cultural economy activity. This research project will fill these gaps in our understanding of artistic location patterns by utilizing data that enables us to provide a comparative analysis of artistic location decisions across a range of different sized cities and across multiple time periods. To do so, we create a systematic methodology to study the role of the arts in urban economies across a wide range of cities. We propose to study the arts not just as engines of growth in large urban centers, but also in the transformation of middle and smaller-sized cities from Detroit, Michigan to Austin, Texas. The ability to identify and analyze the location preferences of artists and how these preferences change over time in different places is critical to advance our understanding of their economic and social impacts at the neighborhood level and towards the implementation of targeted arts development policy.

b. Research Design

In order to study the location preferences of artists and artistic businesses across time and place, this project will rely on three publically available datasets: 1) time-series Census data on social and economic demographics at the zip code and Public Use Micro Area (PUMA) levels, 2) Bureau of Labor Statistics (BLS) zip code level firm-reported industry data, and 3) American Community Survey 2005-2009 estimates. We will extract data from 30 US metropolitan areas and categorize these cities based on four population sizes: 1) 100,000 to 250,000, 2) 250,000 to 500,000, 3) 500,000 to 1,000,000, and 4) over 1,000,000.¹ Using spatial (GIS) and statistical analysis, we will analyze the data in each metro area across four data points from 1980 to the present day (1980, 1990, 2000, and ACS 2005-2009 estimates) to study neighborhood transformation over time. We will primarily rely on data at the zip code level because it is the most consistent geographic boundary across the three datasets. These datasets will allow us to see where artists locate and how their location changes over time, how neighborhoods with artistic concentrations develop over time, and what neighborhood attributes are associated with

¹ These categories were established by Stolarick & Currid-Halkett (2011) and Currid-Halkett & Stolarick (2011a).

artistic activity (both artists and art industries). Finally, these data will allow us to tease out correlations between artistic concentration and neighborhood development over time. By looking at social, economic, occupational, and industrial data over time, we will be able to study how the presence of artists plays a role in neighborhood development.

The research design is appropriate for answering each of our research questions. Specifically, our use of time-series data allows us to see whether the presence of artists in 1980 is associated with neighborhood development in future years. We will study how neighborhoods with concentrations of artists in 1980 and 1990 correlate with other development variables in 1990, 2000 and the present day, using the ACS 2005-2009 estimates. This will enable us to determine how the location preferences of artists and artistic businesses have changed over time by neighborhood and by city size (RQ1). Similarly, our approach enables us to determine whether there is nuance to any of the more generalized patterns: are certain neighborhood attributes associated with an artistic presence (RQ2)? And, does the presence of artistic industries relate to other neighborhood attributes and development processes (RQ3)? We further discuss the specifics of this analysis in Section d. Research Analysis.

c. Data Sources

1. Census Data: Public Use Micro Sample and American Community Survey

The US Census 5 percent Public Use Microdata Sample (PUMS) offers a number of different analytical lenses. First, census data allows us to track artists' residential patterns over time and to study the neighborhood attributes associated with artistic concentration. Census social and demographic data is coded on the zip code level and by census tract and PUMA, which is a state-partitioned geographic area of 100,000 people. We will use the zip code level data to generate the social, economic and demographic variables by neighborhood. We intend to study the following variables: race, ethnicity, household income, education level, poverty rate, housing cost, age of housing stock, rent v. ownership rates, median age, and household and family size. Where zip code data is not available we will use census tracts and correspond each tract to its specified zip code.

Additionally, census data allows us to link particular occupations with industries on a metropolitan level (Currid-Halkett and Stolarick 2011a, 2011b). We can comparatively study the composition of arts industries and the industries in which artists are employed on a city by city basis to capture how artists are employed differently and similarly across metros. For example, are artists in Detroit employed in artistic industries (e.g. music or design) or are they employed in less artistically-oriented sectors such as food services, accommodations, or retail? This data allows us to see not just how and where artists concentrate, but also if particular cities offer more artistic opportunities than others. Do employment opportunities or particular types of neighborhoods drive artist location patterns? PUMS data is available on the PUMA level, thus in some denser cases (New York City, Los Angeles, San Francisco) the data will correspond to neighborhoods. However, for smaller metros the Census artist data will be more limited. Thus, for most of our analysis we will use BLS freelance artists (discussed below) as a proxy for the presence of artists.

2. County Business Patterns, North American Industrial Classification System (NAICS) Data

NAICS data is firm reported data by industry. This data provides employment figures, payroll, and establishment size within each industry. The data is provided on a broad level (e.g. Retail) and in much finer detail (e.g. Art Dealers). We will draw NAICS and Standard Industrial Codes (SIC) from 1980 onwards. NAICS codes were developed in 1997 but the BLS provides a crosswalk between SIC and NAICS. This data is provided at both the metropolitan statistical area (MSA) and zip code levels, and thus allows us to analyze the aggregate snapshot by city along with tracking the location of industries by zip code and matching industry data with the aforementioned social, economic and demographic data. This data will be parceled in two ways. First, we will extract arts-related industries (e.g. 71 arts industries including 71-113 Musical Groups and Artists, 71-112 Dance Companies, 51-211 Motion Picture and Video Production). We will also isolate NAICS code 71-151 Independent Artists and Performers as our proxy for artists. This code captures freelance artists who have set up their own LLC. While not a perfect measure, it is the closest proxy to artists at the zip code level that is consistent across cities and across time.

In the second stage of our NAICS data collection we will extract data on other industries including finance (52), manufacturing (31), and software publishers (5112), among other industrial groups. Our strategy is to study the geographical linkages between arts industries and artists (as captured by the census and the NAICS independent artists code) and other industries. Do artistic industries co-locate with particular “non-artistic” industries? Are there patterns visible across metro areas or within particular types of neighborhoods?

3. American Community Survey (ACS) 2005-2009

ACS data is the most recent Census reported data. As the last Census is over a decade old, much of the social and economic data is outdated. For the purposes of this project, the historical Census data allows us to see neighborhood and city evolution and thus will be useful for our time-series analysis. However, to get a recent snapshot of neighborhoods and their associated attributes, as discussed above, the ACS is the most current data. ACS data on artistic occupations is available at the metropolitan and PUMA level, but not at the zip code level. Thus in order to use this data in tandem with BLS data, a crosswalk between these geographies will be employed. There are caveats to this data. While ACS provides the most recent and fine-grained data, it is not nearly as specific as Census or BLS data for occupational and industry information. The occupational and industry group that artists fall under is “Arts, entertainment, and recreation, and accommodation and food services,” which covers a wide swath of other occupations, some of which are only loosely affiliated with the arts. Thus ACS is most useful for social, economic and demographic data by PUMA and metro. The most accurate assessment of artists will remain the NAICS Independent Artists and Performers group. The ACS data allows us to see the current state of neighborhoods and cities and to compare these conditions to historical Census data. This approach also gives us the opportunity to see whether the historical presence of artists has a transformative effect on neighborhoods in the present day.

Unquestionably, even though our approach thoroughly incorporates the data available at the neighborhood level, artists are a difficult group to follow as they are undercounted in most publically available datasets. However, we feel that the datasets employed will give us the most succinct and comprehensive analysis of artists and their interplay with other industries and social and economic characteristics that comprise a neighborhood.

d. Data Analysis

Our analysis will take two approaches. In the first stage, we will employ geographic information systems (GIS) to spatially visualize artistic activity at the neighbourhood level. GIS is a technological system of correlating statistical data with spatial identity and visualizing these relationships through maps. GIS maps will allow us to identify concentrations of particular industrial, residential, demographic and other variables. These maps allow researchers to identify high concentrations of industrial activity, poverty, ethnic diversity and so forth. GIS allows multiple data sets to “layer” within the same map in order to see spatial associations amongst different statistical variables. Spatial statistics allows researchers to quantify and test if these visual correlations are statistically significant.

Using GIS, we will first map the location of artists and art industries by PUMA and zip code, respectively. After identifying those neighbourhoods with a concentration of artistic activity, we will next map associated neighbourhood demographic data within those high concentration neighbourhoods. In summary, this entails mapping neighbourhood level demographic data, artist and artistic business data, and industry data. Such analysis will allow us to undertake spatial statistical analysis to determine if geographical clustering of art and other industries or neighbourhood attributes exists within the 30 selected cities.

In the second stage of our analysis, we will conduct statistical analysis on the 30 metropolitan areas as a whole. Our empirical strategy is to see if we can tease out a causal relationship between the presence of art and neighbourhood development. We will develop a statistical model that includes specific social, economic and demographic variables (e.g. income levels, rents, educational levels, family size) and artists and art industries. We will study if the presence of artists in earlier years (1980, 1990) predicts neighbourhood development in later decades.

Our aim is to determine whether artists and art industries have a generalizable impact on neighbourhoods across America and what types of neighbourhood attributes are most likely to attract artists. If so, we hope our research can help shape how we effectively employ the arts for social and economic revitalization in diverse types of American communities.

e. Personnel capability

Both PI (Grodach) and subcontractor (Currid-Halkett) are highly qualified to conduct the proposed research. As the curricula vitae show, each individual has published extensively on arts and cultural industries and occupations at the local and regional levels and have employed data

sets related to the proposed research in their prior work. Much of this work is cited in the reference section on pages 9-10 as well.

The roles and responsibilities of personnel are organized by task:

Carl Grodach (PI)

Task 1: Organize and oversee daily activity of research project

Task 2: Finalize literature review, research design and method

Task 3: Oversee and conduct gathering and analysis of census data

Task 4: Oversee and contribute to writing and review of final report

Approximately 8% of time based on 12-month calendar year.

Elizabeth Currid-Halkett (Subcontractor)

Task 1: Conduct GIS analysis

Task 2: Contribute to census data analysis

Task 3: Contribute to writing and review of final report

Approximately 8% of time based on 12-month calendar year.

f. Organizational capacity

The research project will utilize publically accessible US census and Bureau of Labor data. We will employ SPSS and excel software licensed to the School of Urban and Public Affairs at the University of Texas at Arlington to collect, manage, and analyze the data. In addition, GIS analysis will take place at the USC Spatial Sciences Institute, a state-of-the-art data center familiar with generating and processing large amounts of data.

As noted above, both PI (Grodach) and subcontractor (Currid-Halkett) have published extensively on arts and cultural industries and occupations at the local and regional levels (see vitae and pp.9-10).

g. Outline for research report.

- I. Executive summary
- II. Introduction: Overview of the research and key findings
- III. Studying the Location preferences of artists and artistic businesses (Literature Review)
- IV. Presentation of analysis and findings: GIS and statistical analysis of artist location patterns
- V. Conclusion: Policy recommendations and implications for future research

VI. Methodological Appendix

h. Outcome(s) and Measurements

The data collected and analysis undertaken will provide rich information on artistic communities, their location preferences and their long term relationship to neighborhood development. This analysis provides a new framework for studying artist communities and industries. Our methodological approach expands the scholarship and wider policy debate on the role of the arts in economy and society. We aim that our research more closely teases out the impact artists have on neighborhood development, thus informing policy and development and providing more targeted means to support the arts. Our work has both scholarly and practical impact in shaping the larger intellectual dialogue around the importance of the arts to urban economies whilst also providing tools and evidence to shape more directed policy efforts.

i. Schedule

May-August, 2012: Data collection

August-November, 2012: Data Analysis

November, 2012-January, 2013: Report Write-up

February, 2012: Delivery of final report

j. Plans for reporting and disseminating the study results

We anticipate presenting the results of the research at professional conferences, specifically the urban planning conference, the Association for Collegiate Schools of Planning (ACSP), and the geography conference, Association for American Geographers (AAG).

k. Plans for making the report and data accessible to the public

We will use the data and analysis generated for this project to produce a series of scholarly articles based on the research. The NEA will be acknowledged in all publications generated by this research. We will also distribute the report through our own websites, the planning community, and through conference presentations.

References

- Currid, E. (2006). New York as a Global Creative Hub: A Competitive Analysis of Four Theories on World Cities, *Economic Development Quarterly*, 20(4): 330-350.
- Currid, E. (2007). *The Warhol Economy: How Fashion, Art and Music Drive New York City*. Princeton: Princeton University Press.
- Currid, E. (2009). Bohemia as Subculture; “Bohemia” as Industry: Art, Culture and Economic Development, *Journal of Planning Literature*, 23(4): 368-382.
- Currid-Halkett, E. and Stolarick, K. (2011a). Baptism by Fire: An Occupational Analysis of Creative Sector Impact on Regional Economies. Working Paper: University of Southern California/University of Toronto.
- Currid-Halkett, E. and Stolarick, K. (2011b). The Arts: Not Just Artists (and vice versa): A Comparative Regional Analysis for Studying the Composition of the Creative Economy. *The Handbook of Cities and Creativity* (Ed. Charlotta Mellander, Ake E Andersson, and David E Andersson.) London/ New York: Elgar.
- Currid, E. and Williams S. (2010). Two Cities, Five Industries: Similarities and Differences Within and Between Cultural Industries in New York and Los Angeles, *Journal of Planning Education and Literature*. 29(3): 322-335.
- Florida, Richard. (2002). *The Rise of the creative class*. New York: Basic Books.
- Grodach, C. (2010). Art Spaces, Public Space and the Link to Community Development, *Community Development Journal*, 45(4): 474-493.
- Grodach, C. (2011). Art Spaces in Community and Economic Development: Connections to Neighborhoods, Artists, and the Cultural Economy, *Journal of Planning Education and Research*, 31(1): 74 -85.
- Grodach, C. and Seman, M. (2011). The Cultural Economy in Recession: Examining the US Experience. Working Paper: University of Texas at Arlington.
- Ley, D. (2003). Artists, aestheticisation and the field of gentrification, *Urban Studies*, 40(12): 2527–2544.
- Lloyd, R. (2006). *Neo-bohemia: Art and commerce in the postindustrial city*. New York: Routledge.
- Markusen, A. and Gadwa, A. (2010). Arts and culture in urban or regional planning: A review and research agenda, *Journal of Planning Education and Research*, 29(3): 379 -391.

- Markusen, A. and Johnson, A. (2006). *Artists' centers: Evolution and impact on careers, neighborhoods and economies*. Project on Regional and Industrial Economics, University of Minnesota, Minneapolis, MN.
- Markusen, A and Schrock, G. (2006). The artistic dividend: Urban specialization and economic development implications, *Urban Studies*, 43(10): 1661-1686.
- Neff, G., E. Wissinger and S. Zukin. (2005). Entrepreneurial labor among cultural producers: cool jobs in hot industries, *Social Semiotics*, 15: 307-34.
- Scott, A. (2000). *The cultural economy of cities*. London: Sage Publications.
- Smit, A.J. (2011). The Influence of District Visual Quality on Location Decisions of Creative Entrepreneurs, *Journal of the American Planning Association*, 77(2): 167-184.
- Stern, M. and Seifert, S. (2010). Cultural Clusters: The Implications of Cultural Assets Agglomeration for Neighborhood Revitalization, *Journal of Planning Education and Research* 29(3): 262 -279.
- Stolarick, K. and Currid-Halkett, E. (2011). Creativity and the Crisis. Working Paper: University of Southern California/University of Toronto.
- Storper, M. (1997). *The Regional World: Territorial development in a global economy*. New York: Guilford Press.
- Zukin, S. (1982). *Loft living: Culture and capital in urban change*. Baltimore, MD: Johns Hopkins University Press.