About This Study—The Detailed Research Methodology

This *Arts & Economic Prosperity 5* study was conducted by Americans for the Arts to document the economic impact of the nation's nonprofit arts and culture industry. The study focuses on nonprofit arts and cultural organizations and their audiences. It excludes spending by individual artists and the for-profit arts and entertainment sector (e.g., Broadway or the motion picture industry). Detailed expenditure and attendance data was collected from 14,439 nonprofit arts and cultural organizations and 212,691 of their attendees. The project economists, from the Georgia Institute of Technology, constructed a customized input-output model for each study region to provide specific and reliable economic impact data about each region's nonprofit arts and culture sector. This methodology allows the uniqueness of each economy to be reflected in the findings.

The 250 Local, Regional, and Statewide Study Partners

Americans for the Arts published a "Call for Participants" in 2015 seeking local, regional, and statewide organizations interested in participating in the *Arts & Economic Prosperity 5* study on behalf of their communities. Of the more than 300 organizations that expressed interest, 250 agreed to participate. The 250 study partners represent a total of 341 participating study regions; 30 partners represent multiple participating regions (such as a county analysis as well as a separate analysis for a city within the county). A comprehensive list of the 341 study regions along with the affiliated study partner for reach region can be found Page B-5 in the Appendix of this report

The 341 study regions include 113 cities, 115 counties, 81 multi-city or multi-county regions, 20 states, and 12 individual arts districts. They represent all 50 U.S. states and the District of Columbia. The diverse communities range in population (1,500 to four million) and type (small rural to large urban).

The 250 study partners agreed to complete four participation criteria: 1) identify and code the comprehensive universe of nonprofit arts and cultural organizations located in their study region; 2) assist with the collection of detailed financial and attendance information from those organizations, and review the information for accuracy; 3) conduct audience-intercept surveys at a broad, representative sample of cultural events that take place in their study region; and 4) pay a modest cost-sharing fee. No community was refused participation for an inability to pay the cost-sharing fee.

Definition of the Nonprofit Arts and Culture Industry

Each of the 250 study partners identified the comprehensive universe of eligible nonprofit arts and culture organizations that are located within its region. Eligibility was determined using the Urban Institute's National Taxonomy of Exempt Entities (NTEE) coding system as a guideline. The NTEE system—developed by the National Center for Charitable Statistics at the Urban Institute—is a definitive classification system for nonprofit organizations recognized as tax exempt by the Internal Revenue Code. This system divides the entire universe of nonprofit organizations into 10 Major categories, including "Arts, Culture, and Humanities." It is estimated that approximately 100,000 nonprofit arts and culture organizations were registered with the IRS in 2015.

Below is a complete list of the 43 NTEE "Arts, Culture, and Humanities" subcategories that are included in the *Arts & Economic Prosperity 5* study analysis.

- A01 – Alliances and Advocacy
- A02 – Management and Technical Assistance
- A03 – Professional Societies and Associations
- A05 – Research Institutes and Public Policy Analysis
- A11 – Single Organization Support
- A12 – Fund Raising and Fund Distribution
- A19 – Support (not elsewhere classified)
- A20 – Arts and Culture (general)
- A23 – Cultural and Ethnic Awareness
- A24 – Folk Arts
- A25 – Arts Education
- A26 – Arts and Humanities Councils and Agencies
- A27 – Community Celebrations
- A30 – Media and Communications (general)
- A31 – Film and Video
- A32 – Television
- A33 – Printing and Publishing
- A34 – Radio
- A40 – Visual Arts (general)
- A50 – Museums (general)
- A51 – Art Museums
- A52 – Children's Museums
- A53 – Folk Arts Museums
- A54 – History Museums
- A56 – Natural History and Natural Science Museums
- A57 – Science and Technology Museums
- A60 – Performing Arts (general)
- A61 – Performing Arts Centers
- A62 – Dance
- A63 – Ballet
- A65 – Theatre
- A68 – Music
- A69 – Symphony Orchestras
- A6A – Opera
- A6B – Singing and Choral Groups
- A6C – Bands and Ensembles
- A6E – Performing Arts Schools
- A70 – Humanities (general)
- A80 – Historical Organizations (general)
- A82 – Historical Societies and Historic Preservation
- A84 – Commemorative Events
- A90 – Arts Services (general)
- A99 – Arts, Culture, and Humanities (miscellaneous)

Study partners were encouraged to include other types of organizations if they play a substantial role in the cultural life of the community or if their primary purpose is to promote participation in, appreciation for, and understanding of the visual, performing, folk, and literary and media arts. These include government-owned and government-operated cultural facilities and institutions; municipal arts agencies and councils; private community arts organizations; unincorporated arts groups; living collections (such as zoos, aquariums, and botanical gardens); university presenters, programs, and facilities; and arts programs that are embedded under the umbrella of a non-arts organization or facility (such as a hospital or church). If it displays the characteristics of a nonprofit arts and cultural organization, it is included. With rare exception, for-profit businesses and individual artists are excluded from this study.

In the Spring of 2016, the study partners identified a total of 33,851 unique organizations that are located in the 341 study regions and that were eligible to participate based on the definition described above.

Collection of Data from Eligible Arts and Cultural Organizations

Americans for the Arts partnered with DataArts to collect detailed budget and attendance information about each organization's fiscal year that ended in 2015. DataArts' Cultural Data Profile (CDP) is a unique system that enables arts and cultural organizations to enter financial, programmatic, and operational data into a standardized online form. To reduce the survey-response burden on responding organizations, and because the CDP collects the detailed information required for this economic impact analysis, researchers used confidential CDP data as the primary organizational data collection mechanism for the *Arts & Economic Prosperity 5* study. For more information about DataArts and its Cultural Data Profile online platform, visit www.culturaldata.org.

To collect the required financial and attendance information from eligible organizations, researchers implemented a multi-pronged data collection process.

1. On July 11, 2016, DataArts emailed survey requests to each of the 33,851 organizations that were identified by a study partner as eligible to be included in the study. Initially, two versions of the survey were available on DataArts' online platform. Non-participating organizations received multiple reminder emails during the months of July, August, and September.
    a. Organizations located in Arizona, California, District of Columbia, Illinois, Maine, Maryland, Massachusetts, Michigan, Minnesota, New York, Ohio, Oregon, Pennsylvania, Rhode Island, and Texas were requested to participate in the comprehensive Cultural Data Profile. Due to their status as a statewide DataArts partner, these 15 states stood to benefit from having all AEP5-eligible organization submit the comprehensive version of the DataArts survey.
        i. However, eligible organizations in these 15 states were given the option within the DataArts platform to "opt-out" of the full DataArts survey, and instead complete a shorter version of the survey that was designed to collect only the information that is necessary for the AEP5 study's economic impact analysis.

b. Organizations located in all other states were requested only to participate in the shorter version of the DataArts that was designed to collect only the information necessary for the AEP5 study's economic impact analysis.

2. On October 4, 2016, all organizations that had not yet participated in the survey process were sent a link to an abbreviated, one-page version of the DataArts online survey. This survey requested totals only, rather than itemized categories of financial and attendance information.

3. Finally, on October 25, 2016, Americans for the Arts sent the 250 study partners a link to download a paper version of the one-page abbreviated survey. The study partners supplemented the data collected through the DataArts online survey platform with information that they gathered from additional organizations using the paper version of the survey. This was accomplished by emailing the paper version of the survey to non-participating organizations. In several study regions, one or more key community organizations declined to participate in the survey process entirely. In those cases, the study partner identified the information necessary to complete the paper survey through other means such as online annual reports, grant applications, and publicly-available IRS Form 990 filings.

Using all methods of data capture, information was collected from a total of 14,439 eligible nonprofit arts and cultural organizations (7,929 submitted information through the DataArts online platform, and 6,510 submitted information using the paper version of the survey). After accounting for organizations that no longer existed or that were deemed to be ineligible, the response rate among all eligible organizations was 54.0 percent. Among the 341 study regions, response rates 57.6 percent and ranged from 9.5 percent to 100 percent. Responding organizations had budgets ranging from as low as $0 to as high as $785 million (Smithsonian Institution). In some cases, participating organizations provided FY2014 or FY2016 information (rather than FY2015) because it represented their most recently completed fiscal year It is important to note that each study region's organizational expenditure and attendance results are based solely on the actual survey data collected. There are no estimates made to account for nonresponding organizations. Therefore, the less-than-100 percent response rates suggest an understatement of the economic impact findings in most of the individual study regions.

The questionnaires used for all methods of organizational data collection can be found in Appendix C of this *Arts & Economic Prosperity 5* National Statistical Report.

Collection of Data from Arts and Cultural Event Attendees

Audience-intercept surveying, a common and accepted research method, was conducted in all 341 study regions to capture information about spending by audiences at nonprofit arts and cultural events. Patrons were asked to complete a short survey while in

attendance at an event. Researchers provided the local, regional, and statewide study partners with comprehensive and detailed guidelines for collecting a random sample of surveys from attendees to a broad range of cultural events, performances, and exhibits taking place in each study region during 2016. Surveys were collected throughout the calendar year (to guard against seasonal spikes) as well as at a broad range of both paid and free events (a night at the opera will typically yield more spending than a Saturday children's theater production or a community festival, for example).

A total of 212,691 valid audience-intercept surveys were collected. The randomly selected respondents provided itemized expenditure data on attendance-related activities such as meals, gifts and souvenirs, local ground transportation, and lodging. Using total attendance data for 2015 (collected from the participating eligible organizations), standard statistical methods were then used to derive a reliable estimate of total event-related expenditures by attendees in each study region. The respondents provided information about the entire party with whom they were attending the event. With an overall average travel party size of 2.56 people, these survey data actually represent the spending patterns of more than 544,489 attendees.

The study partners mailed or shipped the completed paper surveys to Americans for the Arts. Researchers completed the coding and data entry of all surveys. The surveys were then subjected to a rigorous data cleaning procedure.

- Surveys were removed if the respondent did not provide either the ZIP code of his/her primary home, or their primary reason for being in the study region. With neither of those two data points, the respondent's residency status could not be determined.
- Surveys were removed if the respondent reported that he/she is younger than 18 years of age.
- Surveys were removed if the respondent reported that his/her immediate travel party spent more than seven nights away from their primary residence(s) as a result of attending the cultural event where they were surveyed.
- Surveys were removed if the respondent reported that his/her immediate travel party included more than 12 people.
- Surveys were removed if the respondent reported that his/her immediate travel party spent more than $500 per person as a result of attending the cultural event where they were surveyed.

The questionnaires used for audience-intercept data collection can be found in Appendix C of this *Arts & Economic Prosperity 5 National Statistical Report* (provided in both the English and Spanish languages, as well as in a large font format for the visually impaired).

Economic Analysis

A common theory of community growth is that an area must export goods and services if it is to prosper economically. This theory is called "economic-base theory," and it depends on dividing the economy into two sectors: the export sector and the local sector.

Exporters such as automobile manufacturers, hotels, and department stores obtain income from customers outside of the community. This "export income" then enters the local economy in the form of salaries, purchases of materials, dividends, and so forth, and becomes income to residents. Much of it is re-spent locally; some, however, is spent for goods imported from outside of the region. The dollars re-spent locally have a positive economic impact as they continue to circulate through the local economy. The dollars spent non-locally cease having a local economic impact. This theory applies to arts organizations as well as to other producers. How can a dollar be re-spent? Consider the example of a theater company that purchases a five-gallon bucket of paint from its local hardware store for $100—a very simple transaction at the outset, but one that initiates a complex sequence of income and spending by both individuals and other businesses.

Following the paint purchase, the hardware store may use a portion of the $100 to pay the sales clerk who sold the bucket of paint. The sales clerk then respends some of the money for groceries; the grocery store uses some of the money to pay its cashier; the cashier then spends some of the money for rent; and so on.

The hardware store also uses some of the $100 to purchase goods and services from other businesses, such as the local utility company, and then to buy a new bucket of paint from the paint factory to restock its shelf. Those businesses, in turn, respend the money they earned from the hardware store to buy goods and services from still other local businesses, and so on.

Eventually, the last of the $100 is spent outside of the community and no longer has a local economic impact. It is considered to have leaked out of the community.

The total economic impact describes this full economic effect, starting with the theater's initial paint purchase and ending when the last of the $100 leaks out of the community. It is composed of the direct economic impact (the effect of the initial expenditure by the theater), as well as the indirect and induced economic impacts, which are the effects of the subsequent rounds of spending by businesses and individuals, respectively.

A dollar "ripples" very differently through each community, which is why project economists customized a unique input-output model for each of the 341 participating study regions.

Studying Economic Impact Using Input-Output Analysis

To derive the most reliable economic impact data, input-output analysis is used to measure the impact of expenditures by nonprofit arts and culture organizations and their audiences. This is a highly regarded type of economic analysis that has been the basis for two Nobel Prizes in economics. The models are systems of mathematical equations that combine statistical methods and economic theory

in an area of study called econometrics. The analysis traces how many times a dollar is re-spent within the local economy before it leaks out, and it quantifies the economic impact of each round of spending. This form of economic analysis is well suited for this study because it can be customized specifically to each community, region, or state.

A unique input-output model was constructed for each of the 341 participating study regions based on the local dollar flow among 533 finely detailed industries within its economy. This was accomplished by using detailed data on employment, incomes, and government revenues provided by the U.S. Department of Commerce (County Business Patterns, Regional Economic Information System, and Survey of State and Local Finance), local tax data (sales taxes, property taxes, and miscellaneous local option taxes), as well as the survey data from the responding nonprofit arts and culture organizations and their audiences.

The Input-Output Modeling Process

The input-output model is based on a table of 533 finely detailed industries showing local sales and purchases. The local and state economy of each community is researched so the table can be customized for each community. The basic purchase patterns for local industries are derived from a similar table for the U.S. economy for 2012 (the latest detailed data available from the U.S. Department of Commerce). The table is first reduced to reflect the unique size and industry mix of the local economy, based on data from County Business Patterns and the Regional Economic Information System of the U.S. Department of Commerce. It is then adjusted so that only transactions with local businesses are recorded in the inter-industry part of the table. This technique compares supply and demand and estimates the additional imports or exports required to make total supply equal total demand. The resulting table shows the detailed sales and purchase patterns of the local industries. The 533-industry table is then aggregated to reflect the general activities of 32 industries plus local households, creating a total of 33 industries. To trace changes in the economy, each column is converted to show the direct requirements per dollar of gross output for each sector. This direct-requirements table represents the "recipe" for producing the output of each industry.

The economic impact figures for *Arts & Economic Prosperity 5* were computed using what is called an "iterative" procedure. This process uses the sum of a power series to approximate the solution to the economic model. This is what the process looks like in matrix algebra:

$$T = IX + AX + A^2X + A^3X + ... + A^nX$$

T is the solution, a column vector of changes in each industry's outputs caused by the changes represented in the column vector X. A is the 33 by 33 direct requirements matrix. This equation is used to trace the direct expenditures attributable to nonprofit arts organizations and their audiences. A multiplier effect table is produced that displays the results of this equation. The total column is T.

The initial expenditure to be traced is IX (I is the identity matrix, which is operationally equivalent to the number 1 in ordinary algebra). Round 1 is AX, the result of multiplying the matrix A by the vector X (the outputs required of each supplier to produce the goods and services purchased in the initial change under study). Round 2 is A^2X, which is the result of multiplying the matrix A by Round 1 (it answers the same question applied to Round 1: "What are the outputs required of each supplier to produce the goods and services purchased in Round 1 of this chain of events?"). Each of columns 1 through 12 in the multiplier effects table represents one of the elements in the continuing but diminishing chain of expenditures on the right side of the equation. Their sum, T, represents the total production required in the local economy in response to arts activities.

Calculation of the total impact of the nonprofit arts on the outputs of other industries (T) can then be converted to impacts on the final incomes to local residents by multiplying the outputs produced by the ratios of household income to output and employment to output. Thus, the employment impact of changes in outputs due to arts expenditures is calculated by multiplying elements in the column of total outputs by the ratio of employment to output for the 32 industries in the region. Changes in household incomes, local government revenues, and state government revenues due to nonprofit arts expenditures are similarly transformed.

Calculation of the National Estimates

To derive the national estimates, the 113 individual city study regions only—individual counties, multi-city and multi-county regions, states, and individual arts districts are excluded from this analysis—were first stratified into six population groups, and an economic impact average was calculated for each group. Second, each of the nation's largest 13,338 cities was assigned to one of the six groups based on its estimated 2015 population, as supplied by the U.S. Census Bureau. Third, each individual study region was assigned the economic impact average for its population group. Finally, the values of the study regions were added together to determine the national economic impact findings. Several outlier study regions were removed from the calculations of the national estimates due to their comparably high levels of economic activity in their population categories (the outlier regions are identified in the applicable numerical tables located in Appendix C of this *Arts & Economic Prosperity 5* National Statistical Report).