



GUIDE FOR COMMUNITY TRAINING ON DATA AND TECHNOLOGY

JUNE 2017

Kathryn L.S. Pettit

Maia Woluchem



ACKNOWLEDGMENTS

We appreciate the thoughtful suggestions on the draft guide from Elizabeth Grossman of Microsoft, Bob Gradeck of the University Center for Social and Urban Research at the University of Pittsburgh, Jeff Matson of the University of Minnesota's Center for Urban and Regional Affairs, and Denise Linn of Smart Chicago Collaborative. Leah Hendey at the Urban Institute also provided valuable comments as technical reviewer. We are grateful to the NNIP partners, Microsoft staff, and other organizations that participated in the training survey and in the pilot training in Cleveland, OH, both of which informed this guide. Finally, we want to acknowledge the many nonprofit and government staff members seeking to better understand how data and technology can improve their communities. This guide was supported by the Microsoft Corporation. The views expressed are those of the author and do not necessarily represent those of Microsoft, the Urban Institute, its trustees, or its funders.



Table of Contents

Introduction	2
The Need for Training.....	3
Understanding the Training Environment.....	4
Planning Your Training	6
Conducting and Assessing the Training	14
Fostering a Culture of Putting Data and Technology into Practice	15
Looking to the Future	17
References.....	18
Appendix A: Supplemental Resources.....	19
Appendix B: Sample Interview Guide.....	20

INTRODUCTION

Local government and nonprofit staff are charged with designing and implementing programs to serve residents and neighborhoods. Incorporating data and technology into their everyday practice could help them perform their work more effectively and ultimately bring greater benefits to their communities. To this end, training is a critical component in building staff skills to analyze, interpret, and share data related to programs and community needs. More broadly, training also fosters an organizational culture that values the benefits of data and technology.

In March 2016, the National Neighborhood Indicators Partnership (NNIP) and Microsoft's Civic Technology Engagement Group launched a project to explore and expand training on data and technology for government and nonprofit staff members (see box 1 for project resources). Using insights gathered from the project, this guide is intended for local organizations that are interested in providing in-person training on data and technology for those who are working to improve our communities.

Box 1. Resources from the Community Data and Technology Training Project

- *Project page:* A hub with links to all the project resources at <http://www.neighborhoodindicators.org/training>.
- *Brief:* A summary of the current training landscape and key action steps for various sectors to ensure that local government and nonprofit staff have the data and technology skills needed for their civic missions.
- *Catalog:* Example training descriptions and related materials collected from various cities for local adaptation, including ones described in this guide.
- *Fact sheet:* A summary of results from a survey on current training content and practices.

A wide variety of organizations are well suited to providing training: libraries, applied university centers, local government agencies, coalition leaders, nonprofit support organizations, and civic technology groups. An organization may want to conduct training on a short-term basis to serve a specific community initiative, or it may decide to take on ongoing training as a part of its commitment to build community capacity. In either case, this guide describes the need for

community training, suggests how to understand your training environment, walks through how to plan a successful training, and encourages organizations to contribute to fostering a culture that supports putting data and technology into practice. Appendix A provides links to resources mentioned in the text and Appendix B includes a sample interview protocol for assessing training needs.

THE NEED FOR TRAINING

Data and technology enable organizations to demonstrate a need to advocate for more resources, set priorities for action, or determine where investments should take place. For example, Urban Strategies Council found that speculators were buying foreclosed properties in Oakland's low-income communities of color, and raised concerns about the safety of investors' rehabilitation work. Armed with this information, community groups used the findings to advocate for better oversight, which resulted in new regulations for investor-owned properties. Data can also help governments plan for the future. The city of Durham's Neighborhood Compass publishes neighborhood level indicators on a variety of topics so the community could measure progress on the quality of life for residents. City Councilmembers aware of this resource asked city staff to provide them with information about which neighborhoods were at risk of gentrifying so they could consider the potential impact of public policies in accelerating these trends or in mitigating harm to current residents.

To make these kinds of examples possible in more places, staff in public agencies and nonprofits should be literate in data and statistics, proficient in a variety of software and online tools, and comfortable in interpreting and visualizing data. Training on these skills is even more important in our rapidly changing technical environment where new data and online tools emerge every day. To document current practices around training, NNIP and Microsoft fielded a survey in the summer of 2016 of organizations that provide data and technology training. The survey also revealed how training should be expanded; the 32 respondents to our survey reported what types of skills and knowledge were needed by their audiences (table 1).

Table 1: Identified Training Needs

Goal of the training	Number identifying a gap
Understand basic data concepts (e.g., median versus average, margin of error)	23
Use a technology tool (e.g., GIS, Excel, Tableau) to manipulate or visualize data	21
Collect primary data (e.g., conduct a property conditions survey)	21
Use data related to specific issue areas (e.g., housing, environment)	21
Use data and technology to complete a work-related task (e.g., gather indicators to support a grant application)	17
Use a local data website (e.g., an NNIP partner's or city's open data site) to obtain data.	15
Manipulate data and calculate statistics (e.g., create indicators or calculate statistical significance)	14
Use a specific data source (e.g., American Community Survey, local crime data)	13

Note: Respondents could select multiple categories to identify training needs.

WHY SHOULD YOU PROVIDE TRAINING?

Your organization can play an important role in providing individuals working for the public good more opportunities to build their skills and confidence around data and technology. Organizing training courses can be one strategy to further your organization's mission and to help government and nonprofit organizations better serve residents and neighborhoods. Offering training also raises your organization's visibility in the community and develops relationships with new types of organizations or sectors. The people you train could be potential users of your organization's services or collaborators on future projects. One question for organizations considering training is how to cover the costs of developing and executing courses. Examples around the country have demonstrated training can be sustained by charging reasonable fees or raising philanthropic funds (see funding section below).

UNDERSTANDING THE TRAINING ENVIRONMENT

For those organizations interested in conducting training on data and technology, you must understand what the training needs are in your community (the demand) and what training is

already offered (the supply). For the former, learning about the interests of potential training participants will guide the selection of relevant topics. For the latter, mapping the existing resources will prevent duplication of effort and identify unmet training needs, such as those in table 1. In addition, the assessment process is an opportunity to share your organization's mission, goals, and ideas about supporting your community's capacity to apply data and technology to local issues.

The assessment can take various forms, depending on the time available and your pre-existing knowledge of the data and technology environment. It can be an informal exercise, but you may choose to design a structured process, whether through interviews, focus groups, or surveys of training organizations and potential trainees. Appendix B provides a sample interview guide for audiences who may need training and training organizations.

The following are several important questions to answer:

- What training programs already exist for staff of government and nonprofit agencies?
- What topics, tools, and issues do these trainings cover? What topics or skills are missing?
- What skill levels are data trainings aimed at?
- Who are the target audiences? Who is not being served?
- How well known are these programs to the target audiences?
- What has the demand been for the trainings?
- What do these trainings cost to participants?
- What are the formats for current trainings? What are potential audiences' format preferences?
- Are trainings accessible to the target audience in terms of length, time and day offered, and location?

In the scan of the environment, you should gather information from those government or nonprofit audiences that might need training. They may be able to share where they have sought training or information about data and technology in the past. From the experience of our NNIP partners, government and nonprofit staff may not understand how enhanced capacity can help them and may view training as a burden or distraction from their work. In your interview, start with questions about what the staff want to accomplish in their day-to-day tasks. Ask about their challenges and what questions they may have related to their work. Also try to gauge current or potential data workflow at that organization. Who works or could work with data? The answers to such questions will uncover what training content and format could be

most beneficial to their organization's planning and activities, given any capacity constraints. In addition, describing examples of the use of data and technology related to the organization's mission can illustrate the benefits of training and prompt new ideas for the individual being interviewed.

You should also seek input from organizations that provide training or other entities that enable training through funding or in-kind support. In the government, these may include chief data or information officers, planning agency staff, or librarians. Local funders will know about the needs of their grantees and may already sponsor capacity building activities. Local civic data and technology groups, such as [Code for America brigades](#) or [DataKind](#), may provide training for government or nonprofit staff. Volunteer leaders who convene informal groups around specific skillsets, like mapping or data science, may also offer free educational sessions.

We encourage you to post the output from this assessment publicly, whether as an informal public resource list or a formal report, to help other stakeholders in your community understand the training environment and avoid others having to repeat the effort. At minimum, you should produce an annotated listing of potential audiences and training providers for internal use. Whatever the format, the information will provide the foundation for deciding the appropriate role for your organization and transitioning to planning your training.

PLANNING YOUR TRAINING

The environmental scan on training should shed light on how well different audiences are served and what gaps exist. With this knowledge, you can consider what activities best fit the strengths and mission of your organization. Planning your training requires the following steps:

- Consider potential partnerships
- Identify key audiences
- Determine training topics and goals
- Ascertain staffing needs
- Identify funding
- Develop training format and materials
- Arrange logistics and recruit participants

CONSIDER POTENTIAL PARTNERSHIPS

You may decide to operate your training independently or collaborate with other groups that you identified as part of your local scan of the landscape. Bringing in additional perspectives early can assist you as you settle on your training goals and complete the remaining planning steps. In our survey, respondents reported partnering with universities, public and university libraries, government agencies, United Ways, local Code for America Brigades, or training companies like General Assembly to build curriculums, find space, recruit audiences or access other in-kind support (see box 2 for an example from Pittsburgh, Pennsylvania).

Box 2. Data 101: Partnering to Improve Data Literacy in Pittsburgh, Pennsylvania

The University Center for Social and Urban Research (UCSUR) at the University of Pittsburgh, the NNIP partner in Pittsburgh, conducts a training called Data 101: Finding Stories in Data. Data 101 seeks to build foundational data literacy competency for nonprofit staff (including librarians), government staff, students, and individual residents using paper-based materials to teach foundational skills. UCSUR partnered with Carnegie Library of Pittsburgh to develop the agenda and materials based in part on a training from the MIT Center for Civic Media. Participants were recruited from both UCSUR's Data User Groups and the library's public outreach. The library hosted the event in a community branch and staff from both organizations worked together to conduct the training. Involving the library enabled the university to reach groups outside of the spheres they typically occupy. The team contributed the training invitation, template, sample data, and course evaluation to the NNIP training catalog.

IDENTIFY KEY AUDIENCES

NNIP partners who conduct training recommend being clear about the intended audience for each course. Based on the community needs, your mission, and your existing relationships, you should define the audience you would like to reach. Our project focused on training nonprofit or government staff, but your own trainings may also include resident leaders, journalists, elected officials, or others. Trainings may also be geared to groups working on a common initiative or in an action coalition.

Many respondents from our survey offered their training services to groups with which they were already working in other ways. Leveraging existing relationships meant they could more easily design and deliver the training customized to the audience's culture and interests. For example, NeighborhoodInfo DC piloted its open-source GIS training to serve the nonprofit staff already engaging in its Measure4Change peer-learning project. The City of San Francisco created the Data Academy, the training program for City and County of San Francisco, to develop their own staff's knowledge about data use, data management, and process improvement.

Alternatively, there may be an opportunity to reach new audiences who could benefit from enhanced data and technology skills. The staff of Public Health—Seattle & King County (the Seattle NNIP partner) identified a ready audience from a pool of nonprofit applicants who had been unsuccessful in a grant competition. For the new Best Starts for Kids initiative, the staff is offering data trainings for prospective nonprofit applicants attending bidders' conferences and pre-proposal meetings. The data trainings are customized to meet the specifications of each request for proposal. Though all trainings introduce applicants to data resources, some may emphasize using quantitative data to support a needs statement and others may concentrate on providing context for an application with stories, maps, and other nonnumerical data. The staff will also offer technical assistance to grantees, which could include supplemental training on data collection, analysis, and interpretation.

DETERMINE TRAINING TOPICS AND GOALS

Once you have defined your audience, the next step is to think about needs of your identified group so you can tailor your training. This step is especially critical for audiences whom you do not know well. In some cases, our NNIP partners chose to do quick surveys, informal phone calls, or interviews with potential participants. In addition to the training goals listed in table 1, you may uncover other related topics, such as training on managing data, protecting confidential data, or publishing open data. Other trainings are based on foundations' grant requirements or the needs of specific sectors or community initiatives.

Respondents to our survey generally aimed to achieve multiple goals with their curriculum. For example, training from the University of Minnesota's Center for Urban and Regional Affairs explicitly taught participants how to use Esri's ArcMap software. But the training also coached them on how to access existing data sources and formulate clearer questions when manipulating and visualizing data.

Your own expertise should be a primary factor into your decisions about training topics. Are there data and technology areas in which your organization excels? Are your potential trainers skilled in a certain technology or dataset? Are there any data or technology tools that you already provide? It is possible to develop new expertise, but building on current strengths reduces time and cost. For training organizations interested in expanding their staff's capabilities and knowledge to new areas, consider partnering with another group with experience in that topic for the development and initial implementation of the course.

You can also draw inspiration from experiences in other cities. Our training catalog contains a subset of the trainings reported from our survey, including most of those noted within this guide. Depending on the training, the materials include slides, sample data and exercises, or handouts. The MIT's Center for Civic Media's [Data Therapy](#) posts activity guides and sample data murals.

From the general topic area, you should decide on the specific outcomes you wish to achieve. For example, in the training on Civic Data and Excel, participants learn how to connect to a data feed from Chicago's open data portal, create graphs showing trends, and produce a 3-D map of the data (see box 3). Think here about the incentives for your audience to attend—what data and technology skills will help them in their day-to-day tasks? In some instances, the outcomes may be task oriented, such as finding data on neighborhood poverty rates through American FactFinder. Others may teach more about methods, like introducing participants to data storytelling for community building. The training should be easily digestible and not attempt to cover too much material in one session.

Box 3. Civic Data and Excel: Insights and Open Data

Prompted by the release of Chicago's open data portal, Adam Hecktman, Microsoft's Director of Technology and Civic Engagement for Chicago, developed training on how Microsoft Excel could help people access the data and investigate issues of interest. The curriculum builds upon skills and capabilities that his audiences may already possess in Excel to explore new data sources and additional functionalities, such as PowerBI. The Civic Data and Excel course moves beyond fundamentals to show participants how to analyze, map, and visualize a dataset from the city's open data portal. In addition to helping the individual participants, the training aided the city in cultivating a constituency for open data in the city. Detailed presenter notes walking through the exercises, along with a student guide, are available on the NNIP training catalog.

Consider the mix of skill levels you attract for a training. If necessary, create different versions of the curricula based on the audience's experience or offer a progression of classes that move from entry-level to more advanced topics. Most trainings reported in our survey were for beginners, reflecting the respondents' judgment about the needs of their community groups and government agencies. Your audiences may be more adept with data or technology. As one resource for intermediate and advanced content, the [US Department of Commerce Data Academy](#) offers many curricula on software and data science with an archive of slides, exercises, and sample data or code.

ASCERTAIN STAFFING NEEDS

Next, you will need to think about the staff requirements for the training, from development through implementation. You may also want additional people to set up, to facilitate small group discussions, or to assist participants with exercises.

An external partner organization or individual consultant can supplement the capacity of your own staff. Some NNIP partners have used a combination of internal people and external assistance to conduct their training. The US Census Bureau's data dissemination branches are one nationally available resource. Their mission is to make Census Bureau statistics more accessible, interesting, and relevant. Data dissemination specialists are available to provide free presentations, workshops, consultations, or trainings in person or via webinar. As listed in the NNIP catalog, San Antonio's Community Information Now (CI: Now) invited their regional Census specialist to conduct a training for nonprofit staff on how to use Census data for grant writing and neighborhood analysis. CI:Now staff presented on local data resources for the second half of the training.

IDENTIFY FUNDING

A common concern is how to pay for the time and direct costs involved in providing training courses. Many of the NNIP partners fund training with general support resources, but some also raise dedicated funding for training, either as a standalone request or as one component of a larger grant proposal. Others charge participants reasonable fees. Our brief *Empowering Public and Civic Sectors with Data and Technology* provides arguments for the value of training that could be adapted or cited in funding proposals or in appeals for in-kind donations of space or catering. Requests should emphasize how the community will benefit from more effective and efficient nonprofit and government services. Examples from other cities may also be persuasive.

As one example of receiving funding as part of a larger grant, Grand Valley State University does both training, technical assistance, and evaluation for the grantees of the W.K. Kellogg Foundation. Their series of trainings coaches nonprofit staff on understanding and collecting data to track program outcomes. In Dallas, the Communities Foundation of Texas covered the fees for their grantees to attend the Institute for Urban Policy Research's three-day course on program design and development.

DEVELOP TRAINING FORMAT AND MATERIALS

The findings from your assessment should reveal your audience's preferred formats for learning. Would they choose a one-time longer session or multiple ones that break up the material? Do they need some basic introduction or group demonstrations before taking on independent exercises? The NNIP catalog of trainings and related materials collected from our survey can stimulate ideas for your community. Designing an engaging format can help ensure that participants find it worthwhile to take time out of their busy workday to attend your training.

Our scan of NNIP partners and affiliates showed a range of formats for community trainings, from formal presentations to hands-on exercises. Be creative! Pittsburgh's Data 101 mentioned above explicitly uses only paper (without any software) for its first course to increase the confidence of new participants and encourage interaction among attendees. Data Spark asked training participants to conduct a "Data Hunt" to find specific items on the Rhode Island Data Hub website.

Our project focused on in-person training, which allows participants to benefit from the collaborative environment created through exchanges with their peers and advances long-term relationships among organizations. Most courses were just one session and ranged from two to eight hours. You may also choose to develop a series of trainings that build upon each other, like the SAVI training series (see box 4). For example, start with a class focusing on using software like Excel, then have the next class apply the skills to a specific topic, dataset, or community need.

Box 4. The SAVI Training Series: From Beginner to Advanced

The Polis Center at Indiana University-Purdue University Indianapolis hosts [year-long training](#) on its SAVI website—a local data website that provides data about Central Indiana communities and tools to analyze and visualize the data. The SAVI courses cover a range of skills from basic to advanced. Early in the series, trainings concentrate on how to use the data tools and later, they teach participants about the practical applications of the data to address local issues. Our NNIP training catalog includes a description of the SAVI courses to spark ideas for other local trainers.

Some partners have nested trainings in special events. [Data Days](#) are gatherings of community data users to highlight ways that data has been used to improve neighborhoods and to allow local users to learn from each other. Some are solely focused on data; others have a broader agenda. They are generally a mix of plenary sessions and workshops about data sources and techniques like visualization. For example, the Cleveland Civic Tech + Open Data Collaborative organized [CTRL-ALT-CLE Data Days](#), which included a mix of hands-on training ranging from Excel and visualization to health and property data. The Detroit Digital Justice Coalition published [a guide on hosting Data DiscoTechs](#), short for Discovering Technology, a workshop accessible to all skill levels, ages, and learning styles. The guide walks through the steps to create a space where people can discover technology together and better understand their neighborhoods.

Other trainings are designed as longer courses engaging participants over several weeks or months. The [Performance Analytics training](#) provided by the Johns Hopkins University's Center for Government Excellence as part of the Bloomberg Philanthropies' What Works Cities initiative illustrates a more in-depth training series. BetaNYC's [Civic Innovation Fellowship](#) offers another model of extended assistance. Over seven months, Service Corps fellows, selected from City University of New York students, are trained in the fundamentals of civic technology, data, and design. After this boot camp, newly trained graduates are placed into innovation teams affiliated with Manhattan's 12 community boards to put their knowledge into practice.

Our survey and interviews with key stakeholders have unearthed some general lessons on training formats:

- Individuals have different learning styles. Mix up your course with hands-on activities, presentations, and discussions.
- Slides can be helpful but usually when accompanied by other materials, such as exercises or small-group discussions.
- Examples based on the day-to-day work or interest areas of the audience will show the trainees how to apply the lessons.
- Exercises enable the audience to practice new skills and test their understanding of the material.
- You may encourage participants to bring their own nonconfidential data for in-class exercises, but this will likely require more time from the leaders to guide a group with a variety of data formats and quality.
- Posting your slides, resource lists, and other materials online allows participants to access resources after the class. The materials reinforce the course content for your audience and advertise your training to attract new participants.
- Short videos of specific topics or tools that people can watch outside of a formal training environment are also helpful.
- Documenting the flow and scripts for the training will reduce the effort needed to repeat the training and facilitate future implementations of the course.

ARRANGE LOGISTICS AND RECRUIT PARTICIPANTS

Logistics are an important consideration in the planning of your training, affecting both your budget and the participant experience. Audience feedback from the assessment or solicited separately should drive your decisions, including what days of the week and times of day to hold sessions.

NNIP partners have used a variety of locations for their courses, but many have stretched their funding by using free or low-cost public locations. Libraries or universities may have meeting rooms or computer labs available for community events. You might also meet your audience at their workplace.

Once the logistics are settled, you can now recruit participants. Your calls for registration should clearly articulate the expected outcomes of the training and any recommended prerequisites for trainees. Allies, such as foundation staff, government managers, or past participants, may be willing to contribute an endorsement quote in the invitation or recommend the course to their networks.

CONDUCTING AND ASSESSING THE TRAINING

With your plans in place and recruiting completed, you are ready to conduct the training. Allow for time well before the course to test any technology you plan to use on location, including wireless connections and any required software versions. If you ask participants to bring their own laptops, send detailed instructions ahead of time on what they need to do to prepare. When possible, arrange for one or more assistants to coach participants who are having trouble with any given step. This will keep everyone on track and reduce frustration.

The desired training outcomes should shape your plans to assess the course. Evaluating the success of the training is critical for multiple reasons. Many NNIP partners mentioned that the development of training curriculum and format is iterative; they reflect on the training once it is given, seek feedback, and make improvements for the next time. In addition, assessments can capture how your training influences the participants' behavior and their mindset. Cowan and Kingsley (2015) discuss the approach to measuring and communicating success for capacity-building efforts. You can report on the results of the training to current financial supporters and use the documentation in future fundraising.

Assessment of your training can take many forms. Gathering information before and after the training is ideal. Pre-course surveys on participants' interests and experience can ensure they have any prerequisites, help you refine the implementation of the training, and give a baseline for post-class evaluations. Some trainers do post-training surveys to measure the effectiveness of the current curriculum, the usefulness of the material moving forward, and the interest in future trainings (see box 5). Having participant's complete assessments on paper before they leave the class is one alternative to e-mail surveys with potentially low response rates. Some NNIP partners collect data informally after the training, whether through conversations with audiences or through a quick e-mail. Trainers may also do structured interviews one or two months following the course to see how the participants have (or have not) used their new knowledge. These conversations may also yield testimonials for future recruitment.

Box 5. Sample Training Evaluation Survey

1. Please rate the following aspects of the class by filling in the most appropriate circle.

Question	Response
How well did the course meet stated objectives?	Poor ----- Excellent
How well paced was the course?	Poor ----- Excellent
How useful was the course manual?	Poor ----- Excellent
Did the instructor create a positive learning environment?	Poor ----- Excellent
How would you rate the instructor's knowledge of the course material?	Poor ----- Excellent
Would you recommend this course to others who needed similar training?	Poor ----- Excellent
What is your overall impression of the course?	Poor ----- Excellent
How would you rate the quality of the training facility?	Poor ----- Excellent

2. What specific changes or improvements to this course would you recommend?
3. What is the most important thing you learned from the training?
4. What additional training needs do you have?
5. Please share any other comments you have regarding the course.
6. Would you like to be added to our newsletter?

Name: _____ Organization: _____

E-mail: _____

Source: Jake Cowan and G. Thomas Kingsley, *Monitoring Impact: Performance Management for Local Data Intermediaries* (Washington, D.C.: Urban Institute, 2015).

Note: Sample was compiled from surveys used by NNIP partners in Columbus, OH; Indianapolis, IN; and Washington, DC.

FOSTERING A CULTURE OF PUTTING DATA AND TECHNOLOGY INTO PRACTICE

Direct training efforts build community capacity to understand and apply data and technology. But training is not helpful if people go back to their workplaces and are not empowered to approach their work in a new way. Training can help to foster a culture within an organization that encourages the creative application of data and technology. Our experience from NNIP confirms that community attitudes about data and technology can change; people begin to expect that data and technology should be readily available and a broad set of individuals should be able to leverage them in government and nonprofit efforts. It takes many organizations to accomplish this; your organization will need to join with others to shift the use of data and technology from a novelty into regular practice.

To cultivate this culture, write blogs or briefs about what you are finding works and what does not. Also consider organizing events with others engaged in data and technology training and technical assistance. Developing a local peer-learning community will enhance your own efforts and build the field by accelerating the spread of best practices. [Connect Chicago](#) provides one example of a cross-sector collaboration that catalogs the many organizations delivering training on technology to improve referrals and identify gaps. Although it focuses on training for individual residents rather than institutional staff, the program offers a relevant model for exchanging lessons, materials, and program data on outputs and impacts.

In San Antonio, Texas, the [Alamo Regional Data Alliance](#), which includes CI:Now (the NNIP partner), the mayor's office, the San Antonio Area Foundation, and other data-related organizations, offers a wide-reaching approach for collaboration among multiple sectors. The group's aims to establish and support a culture of data-driven action to improve the quality of life for people in their region. To achieve their vision, they have outlined a range of products and services needed, including training and coaching on understanding and using data and analysis effectively. Their target groups include citizen leaders, public and private sector decision makers, advocates, researchers and analysts.

Several resources suggest strategies for shifting organizational culture around data. The Nonprofit Technology Network offers guidance to nonprofits on building a culture of using data in [Collected Voices: Data-Informed Nonprofits](#) (2014). [Changing Culture](#), a guidebook from the Johns Hopkins Center for Government Excellence (2015), shares ways to diagnose and influence local governments' systems and attitudes related to data. The [Data-Smart City Solutions](#) project

at the Harvard University's Ash Center for Democratic Governance and Innovation, posts stories and guidance on integrating the use of data analytics into local government based on the experience of cities across the country.

LOOKING TO THE FUTURE

We have an immense opportunity to make community-focused work more effective and efficient through the use of data and technology. We hope this guide inspires more organizations to embark on training customized to meet the unique needs of their local communities. As cities and counties around the country face the prospect of fewer federal resources, we need data and technology to enhance efforts around policymaking, program planning, implementation, and targeting distribution of resources. By being prepared with well-trained public-sector and nonprofit staff, we can better address challenges together and improve the quality of life for residents nationwide.

REFERENCES

Alamo Regional Data Alliance. 2016. "[Product Vision Board](#)." San Antonio, TX.

Center for Government Excellence. 2016. [Changing Culture](#). Baltimore, MD: Johns Hopkins University.

Cowan, Jake and G. Thomas Kingsley. 2015. [Monitoring Impact: Performance Management for Local Data Intermediaries](#). Washington, D.C.: Urban Institute.

Nonprofit Technology Network. 2014. [Collected Voices: Data-Informed Nonprofits](#). Portland, OR.

Pettit, Kathryn L.S., and Maia Woluchem. 2017. "Empowering the Public and Civic Sectors with Data and Technology." Washington, DC: Urban Institute.

APPENDIX A: SUPPLEMENTAL RESOURCES

- Alamo Regional Data Alliance
<http://cinow.info/data-planning/>
- BetaNYC Civic Innovation Fellows
<https://beta.nyc/programs/nyc-civic-innovation-fellows/>
- Center for Government Excellence's "Changing Culture"
<https://www.gitbook.com/book/centerforgov/changing-culture/details>
- Center for Government Excellence Performance Analytics trainings
<https://govex.jhu.edu/courses/>
- Code for America Brigade Network
<http://brigade.codeforamerica.org/brigade/>
- Connect Chicago
<http://connectchicago.org/>
- Data DiscoTech (Allied Media)
<https://www.alliedmedia.org/ddjc/discotech>
- DataKind
<http://www.datakind.org>
- Data-Smart City Solutions
<http://datasmart.ash.harvard.edu/>
- Data Therapy
<https://datatherapy.org/>
- Local Users Conferences (Data Days)
<http://www.neighborhoodindicators.org/library/guides/local-user-conferences-data-day-directory>
- Monitoring Impact: Performance Management for Local Data Intermediaries
<http://www.urban.org/research/publication/monitoring-impact-performance-management-local-data-intermediaries>
- Nonprofit Technology Network "Collected Voices: Data-Informed Nonprofits"
http://nten.org/NTEN_images/reports/2014.CollectedVoices.DataInformedNonprofits.pdf
- US Census Bureau Data Dissemination Specialists
<https://www.census.gov/regions>, 1-844-ASK-DATA or census.askdata@census.gov
- US Department of Commerce Data Academy
<https://dataacademy.commerce.gov/>

APPENDIX B: SAMPLE INTERVIEW GUIDE

These are sample questions designed for interviews with organizations providing training on data and technology in your community and with local government and nonprofit staff who may need training. Begin the interview with an explanation about your organization's mission and interest in assessing the community training environment, including any audiences you have identified for your training.

Questions for potential training audiences

1. Please tell me about your organization and your work. Listen and probe for
 - mission
 - staff
 - technical capabilities
 - issue areas
2. Do you use data and technology in your day-to-day work? If yes, listen and probe for
 - resource allocation and operational decisions
 - reporting and measuring impact
 - policy and advocacy work
 - understanding populations served
 - client management
 - research and development and proposals
3. If yes to #2, what data are most valuable to you? How do you access data? Listen and probe for
 - geography
 - specific datasets
 - issue areas
4. If yes to #2, what technology tools do you and your colleagues find most valuable in your current work and why? Listen and probe for
 - use of the technology (internal data management, analysis, visualization, publishing and sharing data)
 - general level of expertise needed (beginner, intermediate, advanced)
 - how many staff are proficient
5. Are there data or technology you want to use but can't? [may need to provide some examples] If so, what is the barrier? Listen and probe for
 - specific motivation and needs (access, interpretation, analysis, visualization)
 - barriers related to staff knowledge and capacity

6. What organizations or services provide data and technology training in this community? Listen and probe for
 - specific providers (to add to your interview list)
 - topics, tools, and issues covered
 - format (if known)

7. Have you or your colleagues participated in this training? If not, why? Listen and probe for
 - match with audience interests/needs
 - accessibility (i.e. frequency, length, time and day offered, and location)
 - overall satisfaction

8. What kinds of training would be useful to you, but are not currently available? Listen and probe for
 - topics, tools, and issues
 - target skill levels (beginner, intermediate, advanced)
 - formats (extended, multi-part series or single, condensed workshops)
 - logistics (length, time and day offered, and location)

9. Are there other organizations involved in community training that we should talk to?

Questions for organizations providing data and technology training

1. Does your organization provide or have capacity to provide data and technology training? Please describe. Listen and probe for
 - specific audiences
 - topics, tools, and issues covered
 - target skill levels (beginner, intermediate, advanced)
 - formats (extended, multi-part series or single, condensed workshops)
 - logistics (length, time and day offered, and location)
 - cost to participants or funding sources
 - demand for the trainings (wait lists, future training plans)

2. Are there other organizations and institutions that support training in other ways than providing it directly? Listen and probe for organizations that provide
 - funding
 - marketing and publicity
 - events for peer exchange or broad education
 - physical space

3. What other training do you think would be useful for local government agencies and nonprofit organizations? Listen and probe for
 - specific audiences
 - topics, tools, and issues
 - target skill levels (beginner, intermediate, advanced)
 - formats (extended, multi-part series or single, condensed workshops)
 - logistics (length, time and day offered, and location)

4. Are there other organizations that provide community training that we should talk to?

ABOUT THE AUTHORS

Kathryn L. S. Pettit and Maia Woluchem are researchers in Urban Institute's Metropolitan Housing and Communities Center. Ms. Pettit also serves as the director of the National Neighborhood Indicators Partnership (NNIP).

ABOUT THE NETWORKS

NNIP is a collaboration between the Urban Institute and partner organizations in more than 30 American cities. NNIP partners democratize data by making them accessible and easy to understand and then helping local stakeholders apply the data to solve problems in their communities. As the network's home, the Urban Institute conducts peer learning activities, documents how our partners are using data to improve communities, helps new partners get started, and develops cross-site projects to explore topics in depth.

The Microsoft Civic Technology Engagement Group (<http://sumo.ly/yH4Q>) works with local and national partners to help communities and governments leverage technology to tackle key societal challenges and make a sustainable and scalable impact on the lives of individuals. Microsoft works with civic leaders and the communities they serve to convene discussions, inform design, and build approaches that embrace the use of technology both for and by the people to improve our lives and our government.

NNIP is a collaboration between the Urban Institute and partner organizations in more than thirty American cities. NNIP partners democratize data: they make it accessible and easy to understand and then help local stakeholders apply it to solve problems in their communities.



For more information about NNIP, go to www.neighborhoodindicators.org or email nnip@urban.org.