

*Creating a Nation of Learners*



INSTITUTE of  
**Museum and Library**  
SERVICES



# DataFerrett & HotReports: Library Data in Context

December 13, 2012 / SDC Conference, Nashville, TN

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IMLS/OPRE

# Start with a problem.

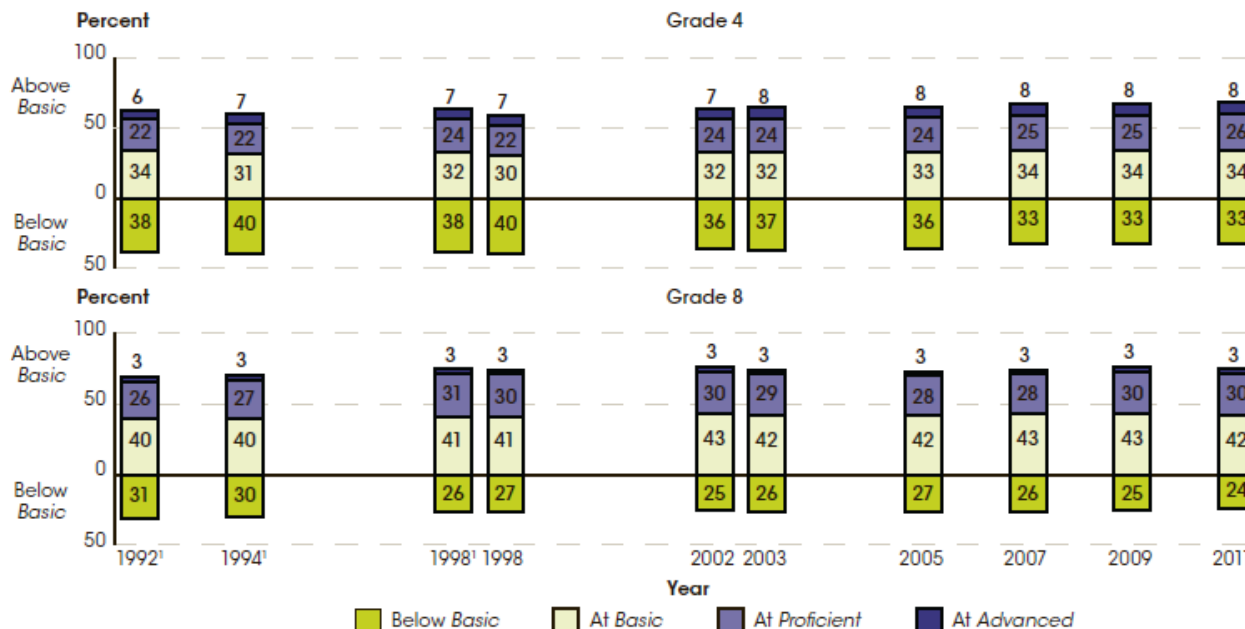
It is important that children learn how to read.

Public libraries provide services that improve children's school readiness, such as providing programs that enhance early reading skills.

We need more money for more programs.

# The Power of Data

**Figure 23-2. Percentage distribution of 4th- and 8th-grade students across National Assessment of Educational Progress reading achievement levels: Selected years, 1992-2011**

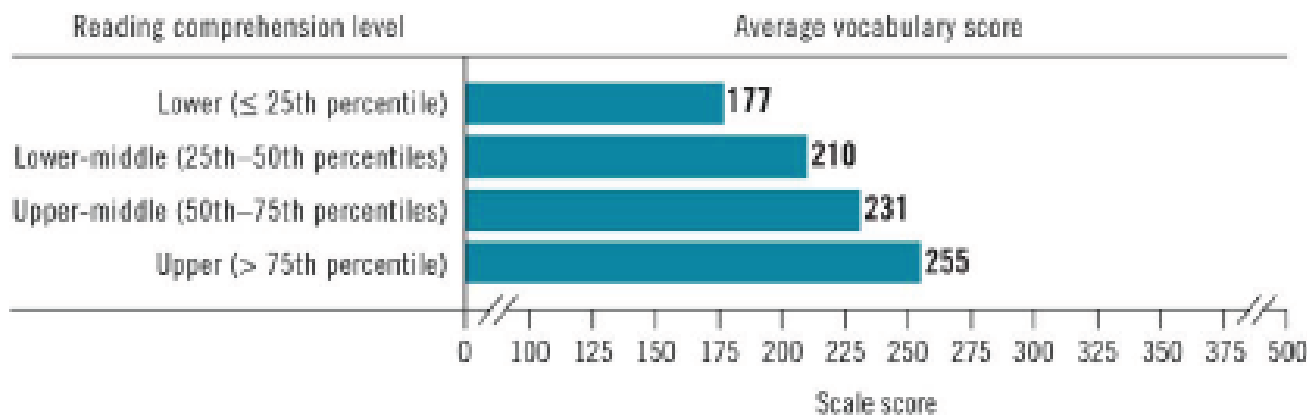


<sup>1</sup> Testing accommodations (e.g., extended time, small group testing) for children with disabilities and English language learners were not permitted during these assessments. Students were tested with and without accommodations in 1998.  
 NOTE: Achievement levels define what students should know and be able to do: *Basic* indicates partial mastery of fundamental skills, *Proficient* indicates demonstrated competency over challenging subject matter, and *Advanced* indicates superior performance. Detail may not sum to totals because of rounding. For more information on the National Assessment of Educational Progress (NAEP), see Appendix B – *Guide to Sources*.  
 SOURCE: U.S. Department of Education, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), selected years, 1992-2011 Reading Assessments, NAEP Data Explorer.

# The Power of Data

**Figure 3.** Average scores in NAEP vocabulary at grades 4, 8, and 12, by reading comprehension level: 2009 and 2011

## Grade 4



# The Power of Data

## How do lower- and higher-performing students differ demographically?

### Grade 4

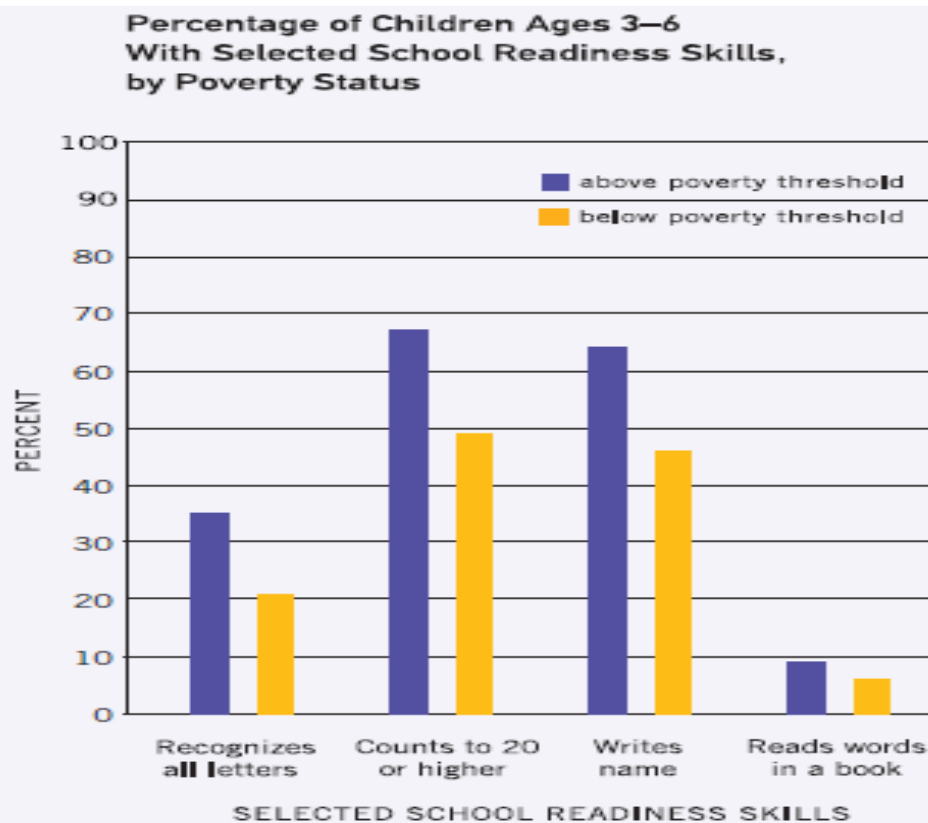
Among fourth-graders who scored **below the 25th percentile** on the vocabulary scale (i.e., below a score of 193) in 2011

- **33%** were White
- **25%** were Black
- **35%** were Hispanic
- **73%** were eligible for free/reduced-price school lunch
- **24%** were English language learners

Among fourth-graders who scored **above the 75th percentile** on the vocabulary scale (i.e., above a score of 245) in 2011

- **72%** were White
- **7%** were Black
- **10%** were Hispanic
- **24%** were eligible for free/reduced-price school lunch
- **2%** were English language learners

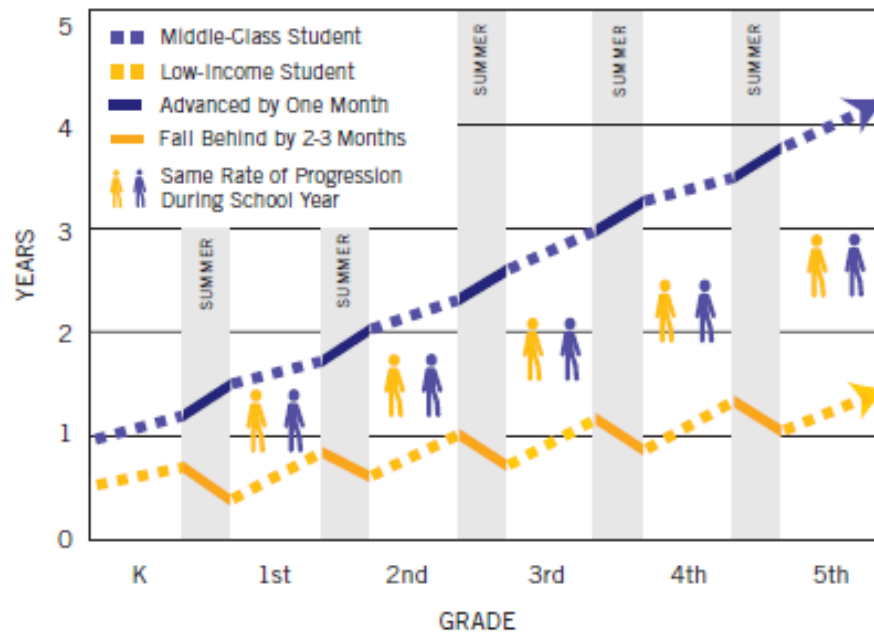
# The Power of Data



Source: O'Donnell, Kevin. Parents' Reports of the School Readiness of Young Children from the National Household Education Surveys Program of 2007, Table 2. National Center for Education Statistics, August 2008. [www.childtrendsdatabank.org/?q=node/291](http://www.childtrendsdatabank.org/?q=node/291)

# The Power of Data

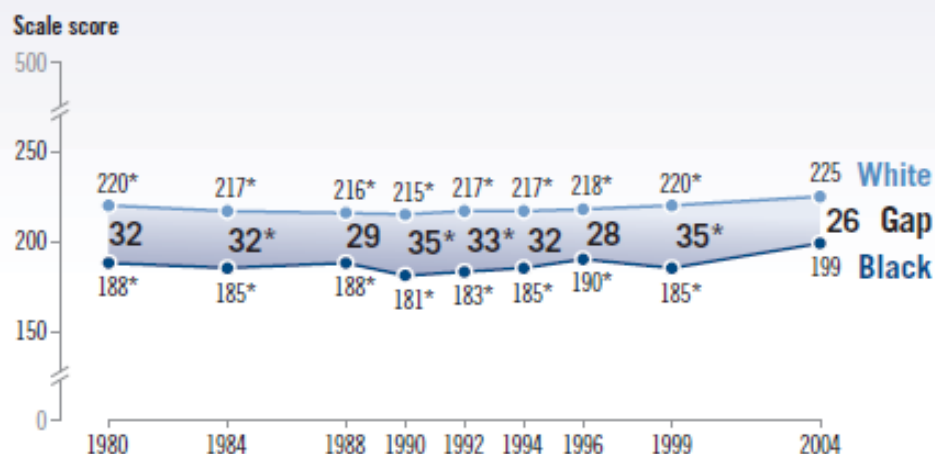
Low-Income Students Fall 2.5 to 3 Years Behind by Fifth Grade



Source: Cooper, H., Borman, G., & Fairchild, R. (2010). "School Calendars and Academic Achievement." In J. Meece & J. Eccles (Eds.), *Handbook of Research on Schools, Schooling, and Human Development* (pp. 342-355). Mahwah, NJ: Erlbaum.

# The Power of Data

**Figure 13. Trends in average reading scale scores and score gaps for White students and Black students at age 9: Various years, 1980–2004**



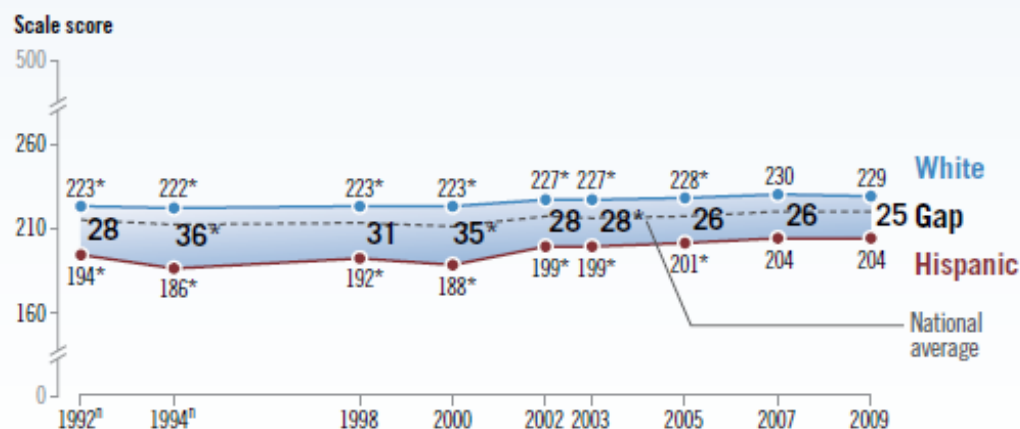
\* Significantly different ( $p < .05$ ) from 2004.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), various years, 1980–2004 Long-Term Trend Reading Assessments.



# The Power of Data

**Figure 17. Reading achievement score gaps between Hispanic and White public school students at grade 4: Various years, 1992–2009**



<sup>a</sup> Accommodations were not permitted for this assessment.

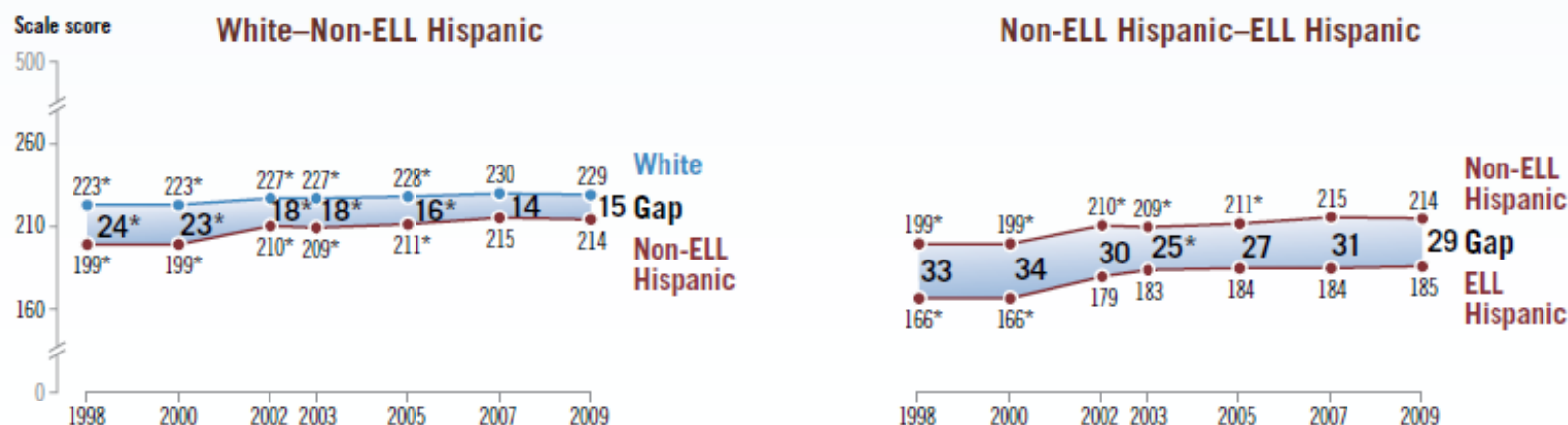
\* Significantly different ( $p < .05$ ) from 2009.

NOTE: Score gaps are calculated based on differences between unrounded average scores.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), various years, 1992–2009 Reading Assessments.

# The Power of Data

**Figure 23. Reading achievement score gaps between Hispanic and White public school students at grade 4, by English language learner status: Various years, 1998–2009**



\* Significantly different ( $p < .05$ ) from 2009.

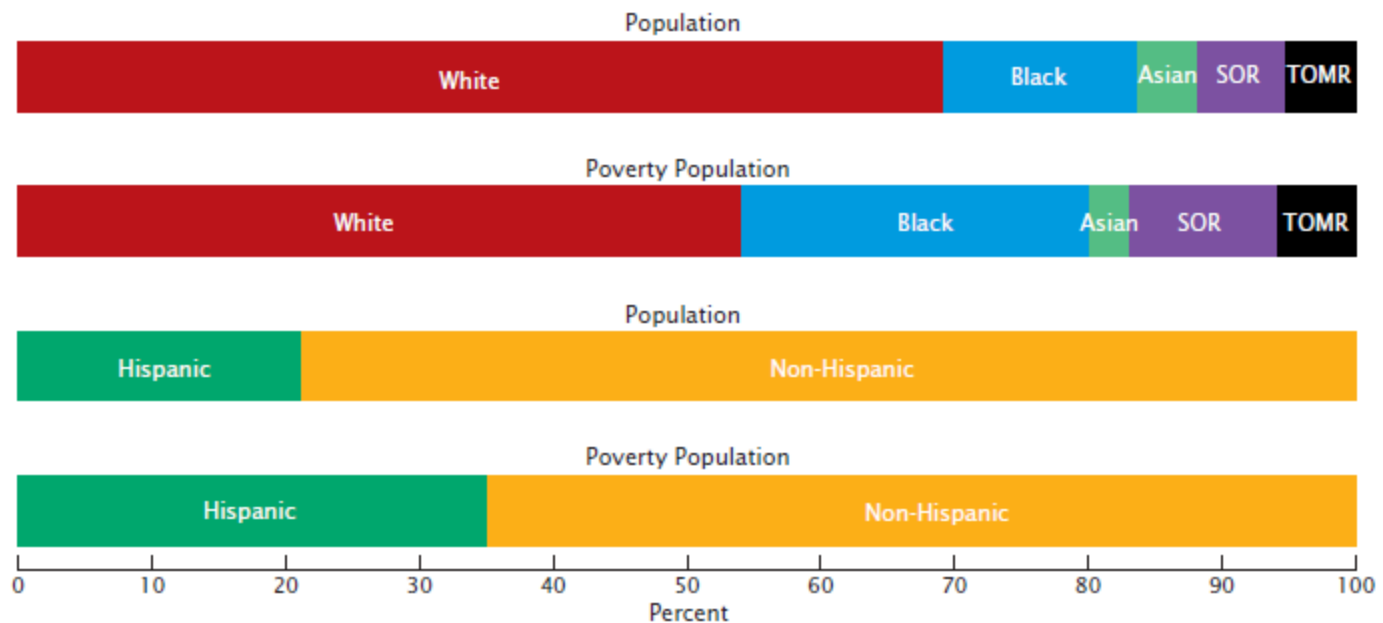
NOTE: Score gaps are calculated based on differences between unrounded average scores. White includes ELL and non-ELL White students.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), various years, 1998–2009 Reading Assessments.

# The Power of Data

Figure 2.

## Distribution of the U.S. Child Poverty Population by Race and Hispanic Origin: 2010

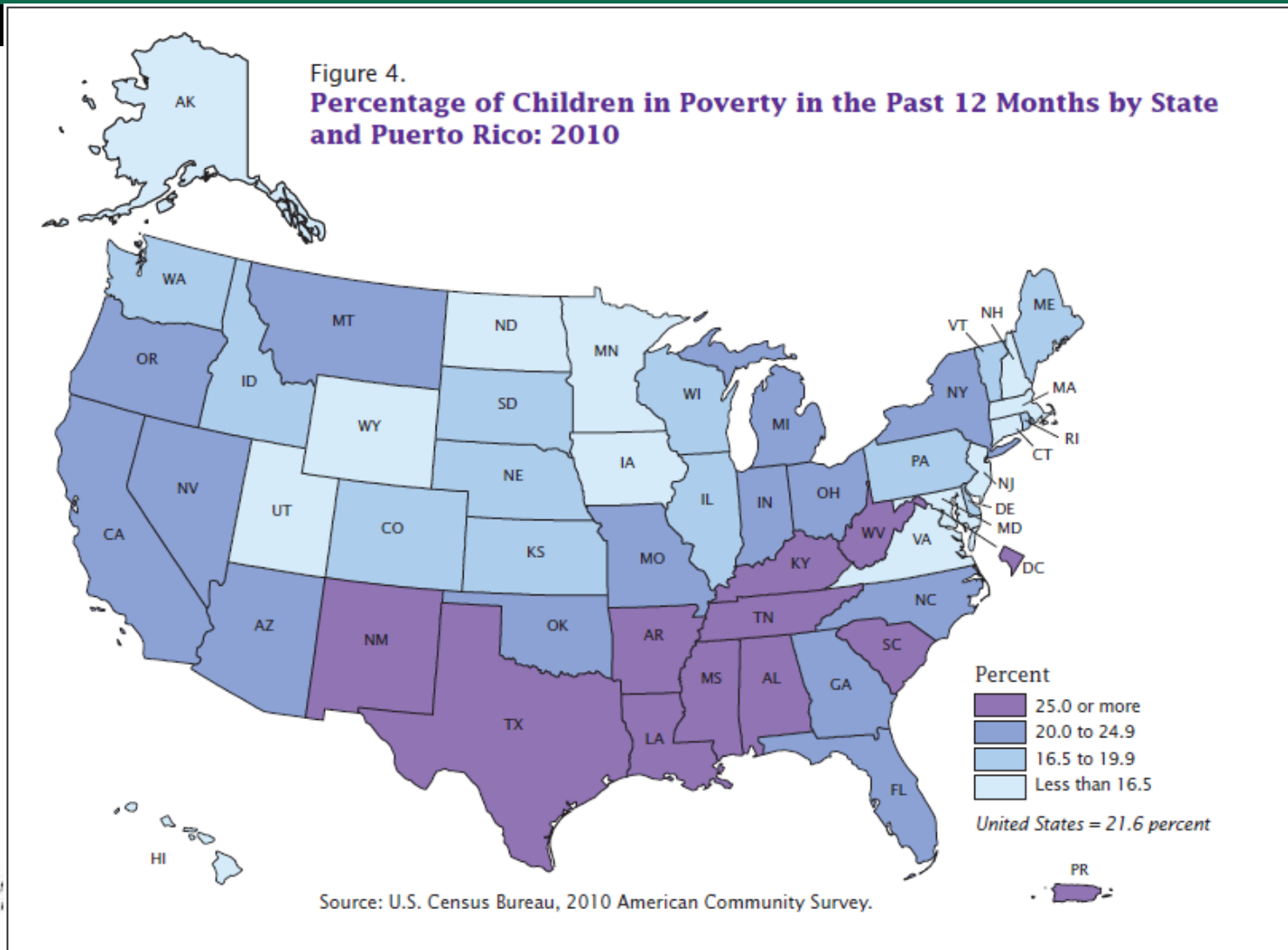


Notes: The terms "White," "Black," and "Asian" refer to persons who reported one particular race group and no other race. "SOR" refers to persons who reported Some Other Race alone and "TOMR" refers to persons who reported Two or More Races (i.e., White **and** Black or White **and** Black **and** Asian). Persons who report only one race among the six defined categories are referred to as the race-alone population while persons who report more than one race category are referred to as the Two or More Races population. This figure shows data using the race-alone approach. Use of the single-race population does not imply that it is the preferred method of presenting or analyzing data. The Census Bureau uses a variety of approaches. Hispanic children may be of any race. For more information see the 2010 Census Brief, *Overview of Race and Hispanic Origin*, at [www.census.gov/prod/cen2010/briefs/c2010br-02.pdf](http://www.census.gov/prod/cen2010/briefs/c2010br-02.pdf).

Source: U.S. Census Bureau, 2010 American Community Survey.



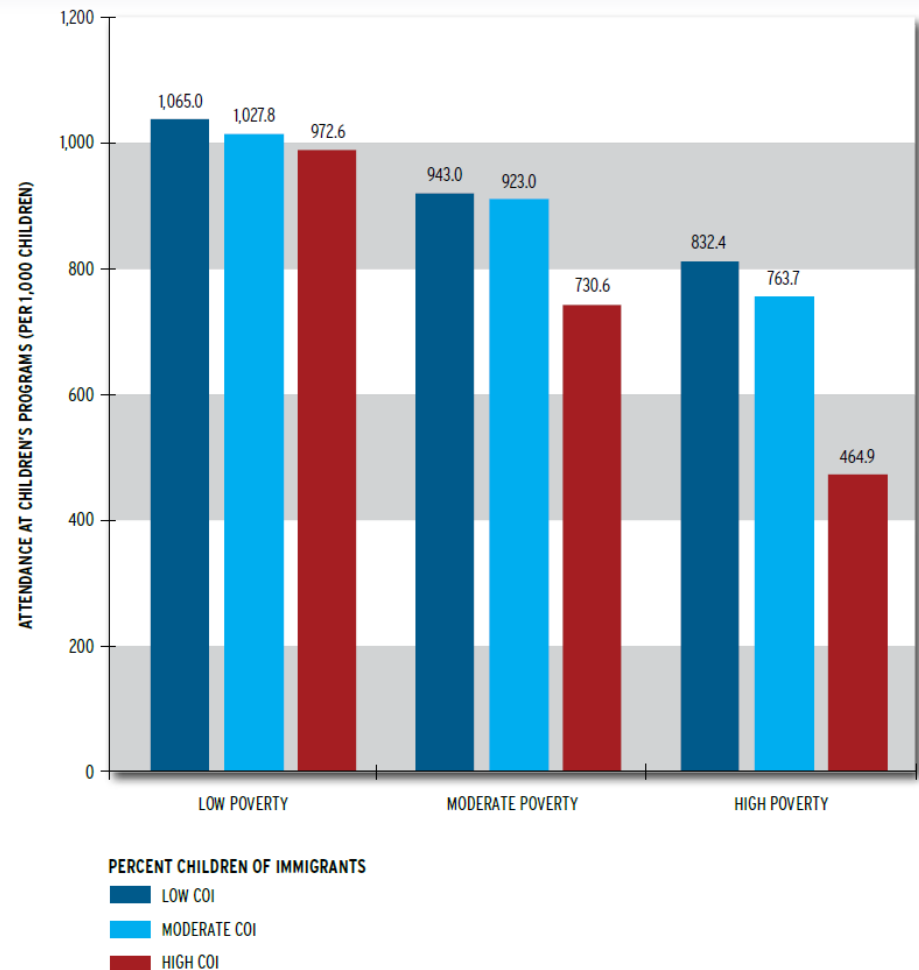
# The Power of Data



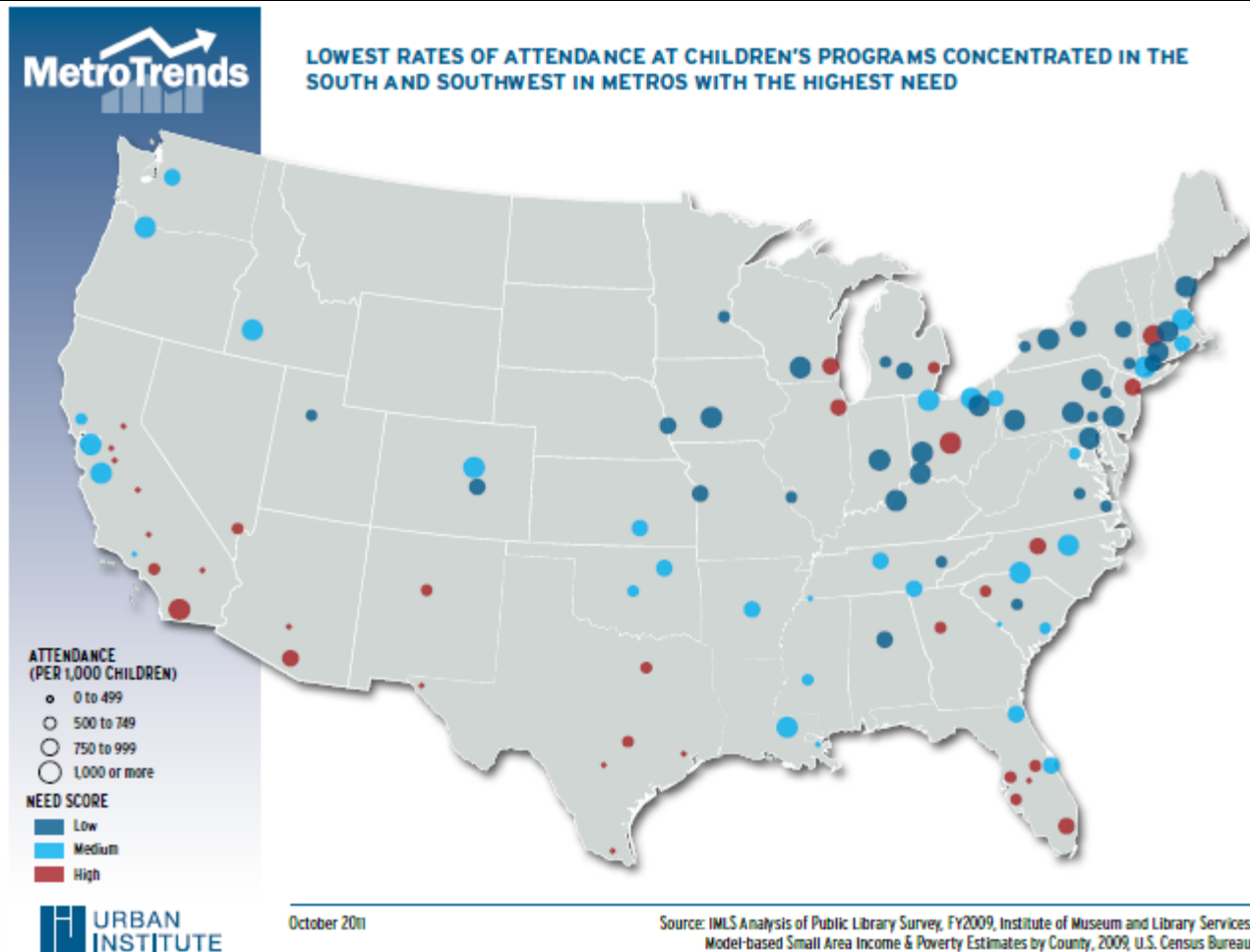
# The Power of Data



ATTENDANCE AT CHILDREN'S PROGRAMS IN PUBLIC LIBRARIES LOWEST IN METROS WITH HIGHEST CHILD POVERTY AND CHILDREN OF IMMIGRANT SHARE.



# The Power of Data



# The Problem restated

- In order to succeed in school, children need to be ready to learn, including having fundamental early literacy skills, when they enter school.
- Certain children are at-risk for entering school not ready to learn.
- These children include children who are Hispanic, children of immigrant parents, and children living in poverty.

# The Problem restated

- These children are often not enrolled in early education programs that help prepare children for entry to school, leaving these children and their families underserved.
- In areas with high concentrations of children with highest risk (poverty and COI status), there are not enough programs to meet the needs.



# The Power of Data

- Statistics without context have no meaning. They are simply numbers.
- In order to make our stories more compelling and powerful, we need to put public library data within context:
  - Geographical
  - Political
  - Social
  - Economic

# How do I get to the Data?

## **Access to PLS and other data:**

Search & Compare tools

Raw Data Files

DataFerrett

PLS HotReports

# Search and Compare Tools

## Search for Public Libraries >>>>>>>>

### Library Information

Library Name:

FSCS ID:

Street Address:

City: [\(Browse\)](#)

State:  

- Any State -

ZIP Code:

Distance:  

Miles from ZIP

County: [\(Browse\)](#)

Phone Number:

About the Data

Help

SEARCH TIP: Searches are conducted based on all information you enter. You do not need to enter information for all fields. More specificity yields better results.

### Additional Characteristics

Library type [\(All\)](#)  

☒ Library System

☒ Central Library

☒ Branch Library

☒ Bookmobile

☒ Books-by-Mail

Changes after Fiscal Year 2009 will be updated in subsequent annual surveys. If information has changed please do not contact IMLS. Instead contact the [State Data Coordinator](#) (pdf file, 90 KB) for the state where the library is located.

NOTE: All library types will be included in your search unless you uncheck the box.

Source: Public Libraries Survey, Fiscal Year 2009

## Compare Public Libraries >>>>>>>>

Select Library of Interest > Choose Comparison Group > Select Report Topics > View Report

### Welcome to Compare Public Libraries

Use this site to create reports comparing one library of interest to other libraries.

The navigation bar below the 'Compare Public Libraries' banner highlights the step you are completing. Once a step is completed, you may click on it to return to that step.

Want to view your saved comparison report? Enter the ID here

Begin Search

Compare Public Libraries uses **Fiscal Year 2009** data from the Public Libraries Survey, which was conducted by the Institute of Museum and Library Services (IMLS).

- [About Compare Public Libraries](#)
- [About The Data In Compare Public Libraries](#)
- [About the Public Libraries Survey](#)



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# Raw Data Files

The screenshot shows the Institute of Museum and Library Services website. The main navigation bar includes links for Home, Press Room, Related Links, FOIA, Web 2.0, and Contact Us. Below this is a secondary navigation bar with links for Grant Applicants, Grant Reviewers, Grant Recipients, State Programs, Research, Resources, News, and About Us. The Research Data Sets section is highlighted in orange. On the left, there is a sidebar with links for Data Sets, Publications, Program Evaluations, Data Analysis Tools, Evaluation Resources, and Research Guidance. The main content area displays the Public Libraries in the United States section, which includes a list of publications and a table of data files.

**Public Libraries in the United States**

[Publications](#) | [Data Files](#) | [Search](#)

**Public Libraries**

Statistics are collected from more than 10,000 public libraries and are also aggregated to state and national levels.

A **public library** is established under state or local law, is open to the public, and provides at least the following:

1. an organized collection of books, periodicals, and other materials;
2. paid staff;
3. an established schedule of hours of operation;
4. the facilities necessary to house the collection;
5. is supported in whole or in part by public funds.

There may be only one public library in a school system that has elementary and secondary schools. A public library may be a bookmobile, a central library, and a branch library.


A **central library** may be the one library in a community that houses the collections of a public library system. A central library may have more than one branch library.

**Public Library (Public Use) Data Files**


Please note that the National Center for Education Statistics (NCES) conducted the FY2005 and earlier Public Libraries Surveys and produced the data files.

Data File and Year	Flat File	Access*	Documentation
Fiscal Year 2010	<a href="#">ZIP</a> (3,169 KB)	<a href="#">ZIP</a> (3,687 KB)	<a href="#">PDF</a> (3,890 KB)
Fiscal Year 2009	<a href="#">ZIP</a> (3,169 KB)	<a href="#">ZIP</a> (3,613 KB)	<a href="#">PDF</a> (574 KB)
Fiscal Year 2008 <sup>1</sup> <sup>2</sup>	<a href="#">ZIP</a> (3,166 KB)	<a href="#">ZIP</a> (3,612 KB)	<a href="#">PDF</a> (1,325 KB)
Fiscal Year 2007 <sup>3</sup>	<a href="#">ZIP</a> (3,043 KB)	<a href="#">ZIP</a> (3,504 KB)	<a href="#">PDF</a> (866 KB)
Fiscal Year 2006	<a href="#">ZIP</a> (2,485 KB)	<a href="#">ZIP</a> (2,728 KB)	<a href="#">PDF</a> (2,721 KB)
Fiscal Year 2005	<a href="#">ZIP</a> (2,451 KB)	<a href="#">ZIP</a> (2,572 KB)	<a href="#">PDF</a> (853 KB)
Fiscal Year 2004	<a href="#">ZIP</a> (2,381 KB)	<a href="#">ZIP</a> (2,475 KB)	<a href="#">PDF</a> (974 KB)
Fiscal Year 2003	<a href="#">ZIP</a> (2,279 KB)	<a href="#">ZIP</a> (2,397 KB)	<a href="#">PDF</a> (1,342 KB)
Fiscal Year 2002	<a href="#">ZIP</a> (2,174 KB)	<a href="#">ZIP</a> (2,453 KB)	<a href="#">PDF</a> (575 KB)
Fiscal Year 2001	<a href="#">ZIP</a> (2,147 KB)	<a href="#">ZIP</a> (2,429 KB)	<a href="#">PDF</a> (1,035 KB)

# TheDataWeb at the U.S. Census Bureau

**U.S. Census Bureau**

People | Business | Geography | Newsroom | Subjects A to Z | Search@Census

**TheDataWeb** for the **DATAFERRETT!**

data: (da • ta) n. a collection of facts from which conclusions may be drawn  
ferret: (fer • it) v. To uncover and to bring to light by searching; to search intensively.

TheDataWeb is a site to support and promote organizational and multi-agency collaborative efforts to enhance the DataFerrett project.

- ▶DataFerrett Home
- ▶What is DataFerrett
- ▶Datasets Available
- ▶FAQs

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- ▶What is TheDataWeb

---

- ▶DataFerrett HelpDesk:  
Toll Free: 866-437-0171
- ▶DataFerrettTeam Email:  
dsd\_ferrett@census.gov

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- ▶DataFerrett Video



## TheDataWeb

TheDataWeb is a network of online data libraries and an infrastructure for intelligent browsing. TheDataWeb provides easy access to data from disparate locations across the internet using DataFerrett as its interface. It brings together demographic, economic, environmental, health, and other datasets that are usually separated by geography and/or organization.

## The Philosophy Behind TheDataWeb:


Data is too difficult to use and data driven decisions are often difficult to achieve because:

1. Finding the right data to use is often confusing.
2. Finding the right way to use the data correctly can be very time-consuming.
3. It is often difficult to find inexpensive tools that help you manipulate and integrate data easily and properly.
4. Finding tools that allow you to create interactive WEB 2.0 websites is difficult and expensive.
5. Data is organized in different ways, and is often out of date and difficult to reuse. Every time a report is created, a new copy of the data needs to be downloaded and organized for that report and updated regularly.
6. There is a lack of internet-based environments that network datasets together well.

TheDataWeb Framework is designed to solve these issues, and is composed of three parts:

1. DataWeb Webservices: The computer plumbing that networks all of the datasets in TheDataWeb together.
2. DataFerrett: A web-based analytical workspace.
3. HotReports: A website builder that can use any of the networked data in the DataWeb. HotReports allow you to create websites focused on specific topics or issues. It encourages reuse of data, meaning data can be used in multiple websites at once, yet be maintained and updated as a single instance of the dataset.

## Get Data ~ Run:



- ▶QuickTour
- ▶Tutorials
- ▶Users' Guide
- ▶Advanced Topics
- ▶Use Examples
- ▶Types of Datasets
- ▶DataSet Topics

100%

# The DataWeb: What is it?

- The DataWeb is a distributed data dissemination system of private and public databases.
  - a network of online data libraries
  - an infrastructure for intelligent browsing (DF)
- The DataWeb provides easy access to data.
- Different datasets: demographic, economic, environmental, health, and other datasets (usually separated by geography or organization)

# The DataWeb: Why is it?

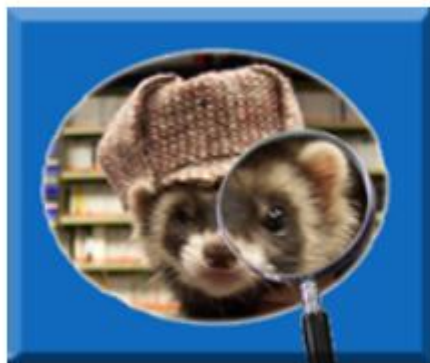
Data is too difficult to use.

Data-driven decisions are often difficult to achieve.

- Too confusing.
- Time-consuming.
- Can't manipulate and integrate data easily.
- Too difficult and expensive.
- Data is... organized in different ways, out of date and difficult to reuse.

# DataFerrett

- DataFerrett is the web interface of the DataWeb.



## DATAFERRETT

A unique data analysis and  
extraction tool.

New Features Update



# DataFerrett: The Data

- Data in DF come from many different sources and organizations.
  - Sources provide data and documentation.
- Two basic types of data in DF:
  - Microdata
  - Aggregated data

# DataFerrett

- Example
  - Launch the DF tool
  - Select a dataset and variables
  - Make a table
  - Make a map

# DataFerrett

<http://dataferrett.census.gov/>

# DataFerrett: Example

U.S. Census Bureau

People | Business | Geography | Newsroom | Subjects A to Z | Search@Census

**TheDataWeb** for the **DATAFERRETT!**

TheDataWeb is a site to support and promote organizational and multi-agency collaborative efforts to enhance the DataFerrett project

data: (da • ta ) n. a collection of facts from which conclusions may be drawn  
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- ▶ DataFerrett HelpDesk:  
Toll Free: 866-437-0171
- ▶ DataFerrettTeam Email:  
dsd\_ferrett@census.gov

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- ▶ DataFerrett Video



### DataFerrett




DataFerrett is a unique data analysis and extraction tool-with recoding capabilities-to customize federal, state, and local data to suit your requirements. (FERRETT stands for Federated Electronic Research, Review, Extraction, and Tabulation Tool.) Using DataFerrett, you can develop an unlimited array of customized spreadsheets that are as versatile and complex as your usage demands.

DataFerrett helps you locate and retrieve the data you need regardless of where the data resides. You can develop and customize tables and select the results to create a graph or map for a visual depiction of your data. You can also save your data in the databasket and save the table you have created for reuse.

### Feedback

Development of DataFerrett requires continuous user input. Feedback regarding DataFerrett's usability and functionality will help make this tool more useful. Share your ideas and comments by calling the DataFerrett Help Desk (toll free) at 1-866-437-0171 or emailing the DataFerrett team at dsd\_ferrett@census.gov.

### Get Data ~ Run:



- ▶ QuickTour
- ▶ Tutorials
- ▶ Users' Guide
- ▶ Advanced Topics
- ▶ Use Examples
- ▶ Types of Datasets
- ▶ DataSet Topics

# DataFerrett: Example


**DataFerrett**

File Edit View Options Special Help

Introduction Step1: Select Dataset & Variable Step2: DataBasket/Download/Make A Table

**data:** (da • ta) *n.* A collection of facts from which conclusions may be drawn

**DataFerrett**  
Browser to TheDataWeb



**ferret:** (fer • it) *v.* To uncover and to bring to light by searching; to search intensively

**About TheDataWeb**  
A collaborative network of Internet data bases ...

**Download Server**  
Adding/Publishing your data to TheDataWeb ...

**Discussion Group**  
Information sharing with other users ...

**Tutorials**  
Brand new to using DataFerrett ...

**Examples**  
Sample Analysis and instruction ...

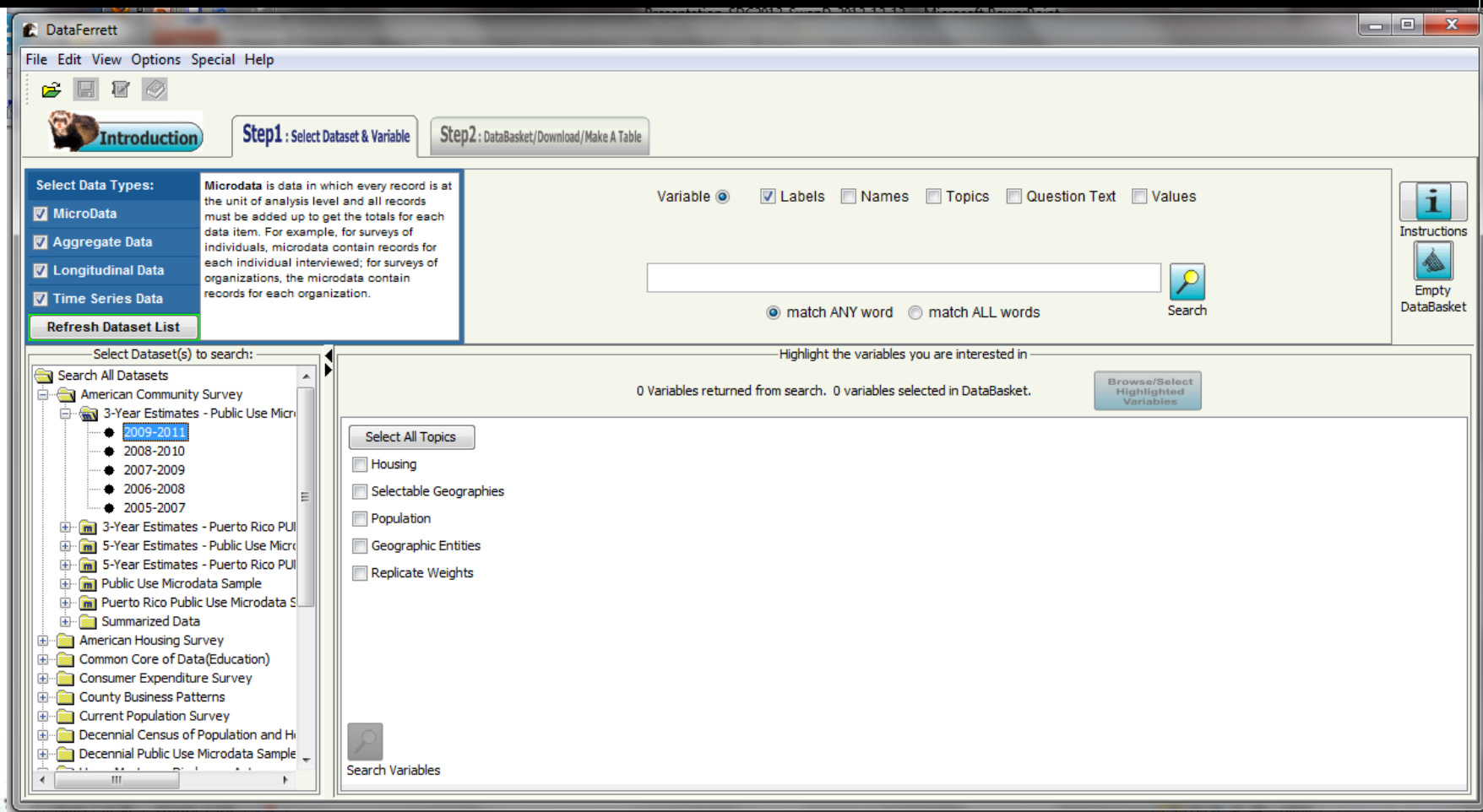
**Users' Guide**  
Handbook on all DataFerrett functionality ...

**Kinds of Datasets**  
Overview different Data Set types and how they behave ...

**Datasets Available**  
Datasets and topics that are available ...

**Get Data Now**

# DataFerrett: Example



# DataFerrett: Example

**Ferrett Browse Variable**

**Browse/Select Variables & Values**

**Your highlighted variables:**

- ACS NATIVITY (2008-2010 - ) Nativity
- ACS YOEP (2008-2010 - ) Year of entry

☐ Select ALL Variables

☐ **Select** ACS NATIVITY Nativity

Nativity

1) Native

2) Foreign born

Additional Metadata Tags here

# DataFerrett: Example

The screenshot displays the DataFerrett software interface. The main window has a menu bar (File, Edit, View, Options, Special, Help) and a toolbar. Below the toolbar, there are two tabs: 'Introduction' and 'Step1: Select Dataset & Variable'. The 'Step1' tab is active, showing a message: 'Review your variables then go back to select more variables or go on to get data'. There are three icons: 'Download', 'Make A Table', and an information icon. On the right side, there is a panel titled 'Act on Your Query:' with buttons for 'Recode Variable', 'Delete Variable(s)', 'View/Modify Variable(s)', 'Advanced Sql Option', 'Change Longitudinal Period', 'Add TimeSeries Time', 'Merge Datasets', 'Save Selected Variable(s) CodeBook', and 'Create Multi-Variable Data Step'.

The 'Ferrett Microdata Recode1' dialog box is open, showing the 'Recode/Regroup Variables' section. It contains a text field 'Recode1' with the label 'is label for the Variable Recode of YOEP'. Below this, there is a table with the following data:

Value	Description
1919	1919 or earlier (Bottom-coded)
1920	1920
1921	1921
1922	1922
1923	1923
1924	1924
1925	1925
1926	1926
1927	1927

Below the table, there is a section 'Set to value' with a dropdown menu set to '1' and a 'Recode' button. At the bottom of the dialog box, there are 'Ok' and 'Cancel' buttons.

On the right side of the dialog box, there is a 'Tell me about' button and a 'Things on the screen' checkbox. Below this, there is a table with the following data:

Label	Values
1 Not Elsewhere Classified (nec.)	{ 1919 , 1920 , 1921 , 1922 , 1923 , 1924 , 1925 , 1926 , 1927 }

At the bottom of this table, there is a 'Redefine Current Row' button.



# DataFerrett: Example

Ferrett Tabulation

File Edit Format View Options Help

GO Get Data

Pivot(s) can be dropped on pivot image above R1.

	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16	C17	C18	C19
		Total NATIVITY			Native			Foreign born											
R1		Total	Before 2000	2000 or after	Total	Before 2000	2000 or after	Total	Before 2000	2000 or after									
R2	Total GEOG-101	?	?	?	?	?	?	?	?	?									
R3	Alabama	?	?	?	?	?	?	?	?	?									
R4	Alaska	?	?	?	?	?	?	?	?	?									
R5	Arizona	?	?	?	?	?	?	?	?	?									
R6	Arkansas	?	?	?	?	?	?	?	?	?									
R7	California	?	?	?	?	?	?	?	?	?									
R8	Colorado	?	?	?	?	?	?	?	?	?									
R9	Connecticut	?	?	?	?	?	?	?	?	?									
R10	Delaware	?	?	?	?	?	?	?	?	?									
R11	District of Columbia	?	?	?	?	?	?	?	?	?									
R12	Florida	?	?	?	?	?	?	?	?	?									
R13	Georgia	?	?	?	?	?	?	?	?	?									
R14	Hawaii	?	?	?	?	?	?	?	?	?									
R15	Idaho	?	?	?	?	?	?	?	?	?									
R16	Illinois	?	?	?	?	?	?	?	?	?									
R17	Indiana	?	?	?	?	?	?	?	?	?									
R18	Iowa	?	?	?	?	?	?	?	?	?									
R19	Kansas	?	?	?	?	?	?	?	?	?									
R20	Kentucky	?	?	?	?	?	?	?	?	?									
R21	Louisiana	?	?	?	?	?	?	?	?	?									
R22	Maine	?	?	?	?	?	?	?	?	?									
R23	Maryland	?	?	?	?	?	?	?	?	?									
R24	Massachusetts	?	?	?	?	?	?	?	?	?									
R25	Michigan	?	?	?	?	?	?	?	?	?									
R26	Minnesota	?	?	?	?	?	?	?	?	?									

NATIVITY Nativity  
YOEP Year of entry  
GEOG-101 FIPS State Code  
RECODE1 YOEP recode

Drag and drop a variable(s) to a column or row.

## Reporting Topics

Libraries and Librarians

Demographics

Children and Education

Business and Industry

# PLS HotReports

[http://thedataweb.rm.census.gov/TheDataWeb\\_HotReport2/pls/pls\\_library.htm?STATE=2&COUNTY=ALL](http://thedataweb.rm.census.gov/TheDataWeb_HotReport2/pls/pls_library.htm?STATE=2&COUNTY=ALL)

And now for something completely different

## **State Library Administrative Agencies Survey**

Feedback on the data collection web tool

During the break

# Happy Data Hunting!

## Thank you!

Deanne Swan  
Sr. Statistician  
IMLS / OPRE  
[dswan@imls.gov](mailto:dswan@imls.gov)

