

4T Data Literacy Virtual Conference
July 14-15, 2016
<http://dataliteracy.si.umich.edu>

This document is organized into two sections. On the first two pages, please find a schedule-at-a-glance including SCECH hours. On the following pages, please find detailed session descriptions with presenter and moderator information.

SCHEDULE AT A GLANCE

THURSDAY, JULY 14			
SCECH hours	Time (Eastern time zone)	Session Title	Presenter
1	9:00 - 10:15am (first 15 minutes are housekeeping)	"But It's a Number, So It Has To Be True!": An Introduction to Data Literacy, Part I	Lynette Hoelter, University of Michigan
1	10:30 - 11:30am	Where The Rubber Meets the Road: Data Literacy in the Content Areas	Jennifer Colby, Huron High School, Ann Arbor, MI
1	12:00 - 1:00pm	Information Literacy Includes Data Literacy!	Jole Seroff, Castilleja School, Palo Alto, CA
1	1:15 - 2:15pm	Close Reading: Unpacking the Impact Language Has on How We Understand Statistics	Tasha Bergson-Michelson, Castilleja School, Palo Alto, CA
1	2:30 - 3:30pm	Real World Data Fluency: How to Use Raw Data	Wendy Stevens, Jacksonville State University, AL
1	3:45 - 4:45pm	Gathering Data via Action Research: A Plan for Librarians, Classroom Teachers, and Students	Susan Ballard, Granite State College/University System of New Hampshire, Concord, NH
6	SUBTOTAL FOR DAY 1		

FRIDAY, JULY 15			
SCECH hours	Time (Eastern time zone)	Session Title	Presenter
1	9:00 - 10:15am (first 15 minutes are housekeeping)	"But It's a Number, So It Has To Be True!": An Introduction to Data Literacy, Part II	Lynette Hoelter, University of Michigan
1	10:30 - 11:30am	Making Sense of Data Visualization	Justin Joque, University of Michigan Library, Ann Arbor, MI
1	10:45 - 11:45am	Data Presentation: Showcasing Your Data With Charts and Graphs	Tierney Steelberg, University of Michigan School of Information, Ann Arbor, MI
1.5	12:15 - 1:45pm	Getting to "aha": Creating the story behind the design of infographics	Connie Williams, Petaluma High School, Petaluma, CA and Debbie Abilock, NoodleTools, Palo Alto, CA
1	2:00 - 3:00pm	Data Literacy and Voting	Martha Stuit, University of Michigan School of Information, Ann Arbor, MI
1	3:15 - 4:15pm	Deconstructing Data Visualizations	Susan Smith, Harker School, San Jose, CA
6.5 (round down to 6)	SUBTOTAL FOR DAY 2		

Minimum number of hours required: 3 SCECH hours
Maximum number of hours available: 12 SCECH hours

Continued on next page

DETAILED SESSION DESCRIPTIONS

THURSDAY, JULY 14

All times EST

9:00am - 10:15am EST

"But It's a Number, So It Has To Be True!": An Introduction to Data Literacy, Part I

Presented by Lynette Hoelter, Interuniversity Consortium for Political and Social Research, University of Michigan, Ann Arbor, MI

Moderated by Jo Angela Oehrli, University of Michigan Library, Ann Arbor, MI

Data literacy is about asking questions as one encounters numerical information in popular and scientific media. Numbers can be as fallible as any other source of information. This first in a two-part presentation will provide a concrete definition of data literacy, provide examples of the kinds of questions to raise when confronted with data, and give sources of information and types of assignments especially well-suited to building data literacy skills. This first part of the presentation will address the following concepts:

- Variables
- Averages
- Percentages, percentiles, and percent change

Attendees will acquire the tools needed to begin similar conversations with students. Because working with numerical evidence is, as much or more, a mindset as it is a set of mathematical skills, the content will be helpful for teachers in all disciplines, not just math or science.

10:30 - 11:30am EST

Where The Rubber Meets the Road: Data Literacy in the Content Areas

Presented by Jennifer Colby, Huron High School, Ann Arbor, MI

Moderated by Jole Seroff, Castilleja School, Palo Alto, CA

Data literacy isn't just about math class. Statistics, data, and numbers now pervade all content areas. Using standardized tests as a real-world lens, this presentation will help content educators see where they can enhance data literacy in their subject areas.

BREAK 11:30am - noon EST

12:00pm - 1:00pm

Information Literacy Includes Data Literacy!

Presented by Jole Seroff, Castilleja School, Palo Alto, CA

Moderated by Jennifer Colby, Huron High School, Ann Arbor, MI

This presentation will provide a big-picture framing for data literacy as a component of information literacy. How do students move through the research process when they begin looking more attentively at how data is "read" and "written"? This informative material will draw on the themes of inquiry and informed decision-making.

1:15 - 2:15pm EST

Close Reading: Unpacking the Impact Language Has on How We Understand Statistics

Presented by Tasha Bergson-Michelson, Castilleja School, Palo Alto, CA

Moderated by Wendy Stephens, Jacksonville State University, Jacksonville, AL

How do the words we use to frame and describe statistics potentially change how readers perceive their meaning? Students often go looking for "some number" to use as evidence, but the emotionally evocative language in which the statistics are often embedded may go unnoticed, even while it sways the readers' opinion of its applicability to their need. Luckily, applying students' formative skills in literary analysis can go a long way toward helping them move beyond initial responses to successfully analyzing and evaluating data. Come play with the language of statistics and explore ways to extend existing close reading practice to better support data literacy.

2:30 - 3:30pm EST

Real World Data Fluency: How to Use Raw Data

Presented by Wendy Stevens, Jacksonville State University, Jacksonville, AL

Moderated by Tasha Bergson-Michelson, Castilleja School, Palo Alto, CA

High school students don't often get to work with raw data. The collection or generation of data may seem monolithic and unquestionable. Students are more likely to confront data through headlines crafted to entice reader curiosity and stress novelty. This webinar will illustrate how students can travel backward from news' accounts and soundbites, first to study the parameters or the nature of data behind studies making use of a data set to even then find the raw data when available.

3:45 - 4:45pm EST

Gathering Data via Action Research: A Plan for Librarians, Classroom Teachers, and Students

Presented by Susan Ballard, Granite State College/University System of New Hampshire, Concord, NH

Moderated by Kristin Fontichiaro, University of Michigan School of Information, Ann Arbor, MI

In today's data-driven world, librarians and educators are under increasing pressure to show that their efforts yield measurable results. Action research (AR) is a flexible framework in which educators can design interventions with assessment in mind, implement those changes, measure the impact, and share the results. This practitioner-friendly approach puts you in the driver's seat. You don't need a PhD in statistics to gather data that matters! In this presentation, you'll learn more about the AR cycle and its power to help you measure and communicate what matters. Once you have used it yourself, you'll be able to teach your students to design their own AR!

continued on next page

FRIDAY, JULY 15

All times EST

9:00 - 10:15am EST

"But It's a Number, So It Has To Be True!": An Introduction to Data Literacy, Part II

Presented by Lynette Hoelter, Interuniversity Consortium for Political and Social Research, University of Michigan, Ann Arbor, MI

Moderated by Jo Angela Oehrli, University of Michigan Library, Ann Arbor, MI

Data literacy is all about asking questions as one encounters numerical information in popular and scientific media. Numbers can be as fallible as any other source of information. This second in a two part presentation will provide a concrete definition of data literacy, provide examples of the kinds of questions to raise when confronted with data, and give sources of information and types of assignments especially well-suited to building data literacy skills. This second part of the presentation will address the following concepts more closely:

- Sampling
- Margin of error/confidence
- Correlation
- "Controlling" for ...
- Significance

Attendees will acquire the tools needed to begin similar conversations with students. Because working with numerical evidence is as much or more a mindset as it is a set of mathematical skills, the content should be helpful for teachers in all disciplines, not just math or science.

10:30am - 11:30am EST

Making Sense of Data Visualization

Justin Joque, University of Michigan Library, Ann Arbor, MI

Moderated by Kristin Fontichiaro, University of Michigan School of Information, Ann Arbor, MI

Data visualization is first and foremost a sense-making process; it is a means by which we extract meaning from complex datasets. This presentation will explore the ways that data can be transformed into visual representations and how we can make sense of these visualizations. Discussion will include a variety of types of visualizations and when they are most effective. This talk will briefly include information about tools for making data visualizations, but the focus will be on how to read and understand them. The conclusion will discuss ways in which data visualization and data literacy can be taught in the classroom.

10:45am - 11:45am EST

Data Presentation: Showcasing Your Data With Charts and Graphs

Presented by Tierney Steelberg, University of Michigan School of Information, Ann Arbor, MI

Moderated by Martha Stuit, University of Michigan School of Information, Ann Arbor, MI

Learn to use charts and graphs to answer questions about data! Get answers to questions like: What are some rules of thumb for creating impactful charts? When is it best to use one chart type over another?

and, Which will readers find easier to swallow, a pie chart or a waffle chart? Discover new types of charts, and rediscover old ones, while learning how to put them to use most effectively.

BREAK 11:45am - 12:15pm EST

12:15pm - 1:45pm

Getting to "aha": Creating the story behind the design of infographics

Presented by Connie Williams, Petaluma High School, Petaluma, CA and Debbie Abilock, NoodleTools, Palo Alto, CA

Moderated by Susan Smith, Harker School, San Jose, CA

Most of the work needed to build an infographic is done well before sitting down at a computer to use a graphics application. The infographic is built from the questions designers (students) ask themselves about the relationships between the data, the images, the correlations between the two, and the intended story. This presentation will show the steps students can take to know how much data will be needed to tell the intended story through an infographic. This storyframing allows student designers to intersect data, image, and design to create a visual draft of an infographic that is then taken to the computer and graphics application where colors, shapes, and design all flow to complete an infographic.

2:00 - 3:00pm

Data Literacy and Voting

Presented by Martha Stuit, University of Michigan School of Information, Ann Arbor, MI

Moderated by Tierney Steelberg, University of Michigan School of Information, Ann Arbor, MI

This presentation will apply newly learned data literacy concepts to the context of the 2016 Presidential election. The discussion will include how to talk with students about controversial topics with statistics and visualizations, especially when the statistics or visualizations favor one side of a multi-sided issue. In addition, questions about how polling works as well as recommendations for good sources of balanced election reporting will be incorporated into the presentation.

3:15 - 4:15pm

Deconstructing Data Visualizations

Susan Smith, Harker School, San Jose, CA

Moderated by Debbie Abilock, NoodleTools, Palo Alto, CA

This presentation explains a rationale and a framework for librarians and teachers to integrate the study of data visualizations into non-STEM high school courses. Given the ubiquity of informational graphics in teens' lives, this call to action will inspire ways to incorporate the "reading" and the evaluation of infographics into curriculum that helps students deconstruct meaning and consume and create visualizations responsibly in academic and non-academic settings.

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