Laura Gerhard: Hi, everybody, this is Laura. Welcome participants. I'll get started right away. The way you display your data is important and it has a large effect on how engaged your readers or participants are in your material. When you write a report or present, you don't want to see this. Also, the way you display your data determines how easily your readers or participants understand your material. So, you don't want to see this either.

Laura Gerhard: What you do want to see is this. It's our job as writers and presenters to effectively display data so that our readers and participants are engaged and understand the material. This webinar is about providing some tips in using a variety of graphical tools to effectively engage your audience and to facilitate comprehension of the material.

Laura Gerhard: The objectives of this webinar are three-fold. First off, we want to talk about data display, why does it matter. We're going to talk about the good, the bad, and the ugly and give examples of each. We're going to give overall graphic guidelines for both tables and graphics and we're going to give tips for effective presentation.

Laura Gerhard: Now, Shawn is going to pick up with data display.

Shawn Flower: Good afternoon, everybody. I understand that we have a bit of a problem hearing Laura so please let me know if I'm speaking too loudly or if there's any other problems. We want to talk about data display. As we mentioned, the good and the bad and the ugly.

Shawn Flower: The reason to have a good visual display of your data in reports and presentations is that it allows you to present numerical or statistical data in a time and space-saving manner. It takes advantage also of how people process information. Readers are drawn towards tables and figures because they perceive it as easy reading compared to reading a lot of texts.

Shawn Flower: Readers also rightly assume that these display items will provide them with a larger amount of information in a shorter span of time. But, to do this well with good graphic displays, you need to engage your participants and you need to make your data understandable. The results of all of that, if you do it well, is you increase your audience comprehension of your findings.

Shawn Flower: We're going to talk about specific tips to do this in a moment but before we go into that, we do want to talk a bit more about the bad and, of course, the ugly. Can I get a check in on am I speaking loud enough? If anybody could type in 'yes' into the chat, that would be great. Terrific. Thank you.

Shawn Flower: All right, the bad. What happens with a bad graphical display? Well, it's one that is not brief. It's one that is not informative. It's where you [inaudible 00:03:57] not informative. It's where you may have too much information in a single graphic. It could be a situation where
you didn't intend to be confusing, but in fact, you were. The end result is that you actually didn't add anything to the final product. We like this little graph. We weren't sure whether he looked confused or introspective or just baffled, but we liked this graphic for this example.

Shawn Flower: I'm going to talk about the ugly. We're using this diagram. The ugly, you could say that occurs when you present findings that actually distort your results or create confusion or makes it more difficult to understand. When you're misleading, intentionally or not, we can be accused actually of lying with statistics.

Shawn Flower: I'm going to talk about this particular graph. It's a very serious subject because the intent here was to show the degree of the problem of unreported sexual assault, but this actually is not an accurate representation of the issue. This actually was taken directly from an article in Slate magazine by Amanda Marcotte who talks about three major issues with this infographic. I've actually added a link in the backend of the presentation to that article if you want to read more.

Shawn Flower: I'm just going to talk about the first two and the first issue is that the graphic assumes there's one rape per rapist, but the reality is that your average rapist attacks up to six victims. Well, that's difficult to capture in an infographic, it could be made clearer just by labeling the figures as rapes instead of rapists.

Shawn Flower: The second major issue is the graphic overestimates the number of unreported rapes. The Rape, Abuse, and Incest National Network using government numbers estimates that 54% of rapes go unreported. I know there's a lot of debate about this, but in any event, Marcotte said that tweaking the infographic to reflect this more conservative number wouldn't make the image less convincing but it would make it more accurate.

Shawn Flower: Let's talk a little bit more about the different types of graphics, when you should use them, and tips and best practices. Overall, our goal is to misstep the bad and try to avoid the ugly altogether. I also wanted to mention that if you have any questions during the presentation, you're welcome to type it into the chat box. Erin is monitoring that for us and will be able to let us know if you have any questions.

Shawn Flower: Statistical graphics, the goal is to show the big picture and they're really meant to be paragraphs of data. The truth is, these tools are best when they're constructed to convey one finding or one concept. There's a guy named Edward Tufte, I don't know if any of you hear of him. We attended one of his workshops about a year ago and he has such a way with displaying data in an interesting, I would say, arresting manner.

Shawn Flower: He has a phrase that he uses or a quote from Edward Tufte is, "What makes for such graphical elegance?" That's a great way to term what he does, elegance. "Good design has two key elements, graphical elegance is often found in simplicity of design and complexity of
data.” If you have a chance to see some of his work, he has these four beautiful books. He could take an entire season of baseball and summarize it down into one graph.

Shawn Flower: It's just amazing, but for those of you who don't have a chance to see him, I just wanted to emphasize that this idea of simplicity and complexity are actually not completely in converse. The challenge, of course, is how do you combine simplicity of design with complexity of data? There was one website I found that said, "It lies in what the designers call the squint test. When you squint at your page so that you can not read any of the text, do you still get something from the page?"

Shawn Flower: We're not quite that ambitious. What we're talking about today is about doing effective reports and presentation graphics and I want to talk about the fact that effective graphics actually can be more revealing than statistical tables. As we said, the objective of a graph is to show or convey the major story being revealed by the data in an unambiguous and illuminating form.

Shawn Flower: Effective graphics augment or supplement but do not duplicate your text. They only convey your essential facts. They omit visually distracting detail and they're easy to read and understand. Graphs should not only emphasize important statistical messages and indicate relative size or trends, but also create reader interest in the statistics.

Shawn Flower: In looking at text and graphics, it's important that text should refer to each graphic and tell the reader what to look for. The text should also only discuss the highlights of the graphic and you need to make sure that your format, titles, and labels should be consistent across graphics.

Shawn Flower: I will confess that I, until I worked on this presentation, I confess that often in my reports, I'd say, "See table such and such," and then I talk about the various items in the table. I think I'm going to take another look at my own reports and see where I can cut down on some of that text and make it a little bit more trusting of the reader that they will actually read the tables and the text.

Shawn Flower: When I'm looking at writing a report or you're looking at writing a report, sometimes you ask yourself the question, how do you choose between a table, a figure, or text? I found this chart, again, it was a web search. There's a link to the back, in the back of the reference section, and these are just some basic guidelines of what you might choose to do.

Shawn Flower: For a table, you would use numerical values and you want to put it into a small space or if you want to compare and contrast data values of characteristics among related items. You also want to talk about the presence or absence of specific things. You would use tables when you have 10 or fewer data points, when, as I said, you have exact numeric values. The rule of 10, the 10 or fewer, I'm not sure that's a hard and fast rule. I think some of this
really is art and science. I think you should be guided by what you think works well for you within these parameters.

Shawn Flower: The next thing is to think about when to use a figure. For figures, you're looking at trends and patterns and relationships across and between data sets. You want to summarize research results and you can use graphics or data plots and/or when you want to do a sequence of events, procedures, or geographical features. Schematics or diagrams, images, photographs, maps would all fit well into the figure. Generally, you would also use figures when you have more than 10 data points. Again, it's to show the big picture. It's not the fine data. It's not granular. It's the big picture.

Shawn Flower: I also want to note that the APA manual suggests that reporting the results of most statistical tests, you would do that actually in the text and not in tables. I think that's just the definition of these findings show that da, da, da, da. Finally, you would choose to use text when you have limited or uncomplicated data, when your table would have two or fewer columns, or when the data is peripheral to the study or irrelevant to the main study findings.

Shawn Flower: Let's talk about some table guidelines. There's a theme here on this webinar that things should be simple, things should be self-explanatory.

Speaker 3: [crosstalk 00:13:11].

Shawn Flower: It really is the critical thing.

Speaker 4: [crosstalk 00:13:12].

Shawn Flower: You want to make sure that what you put on your table-

Speaker 4: Paycheck and some [crosstalk 00:13:16].

Shawn Flower: [crosstalk 00:13:16], that the reader should not have to refer to the text to understand what you're doing.

Speaker 3: [crosstalk 00:13:17].

Shawn Flower: The next thing is you want to divide the data. If you're presenting large amounts of information, divide the data into clear and appropriate categories. The next is they should be simple-

Speaker 3: [crosstalk 00:13:35].
Shawn Flower: ... and you want to avoid all non-data ink. That means avoiding extra lines and other items because that can be confusing.

Speaker 5: [crosstalk 00:13:41] actually good. I'm [crosstalk 00:13:41].

Shawn Flower: Finally, you want to make sure that you declutter, to make sure-

Speaker 3: Yeah.

Shawn Flower: ... there's initial spacing between columns and rows-

Speaker 3: Go take your nap, Jim.

Speaker 4: [crosstalk 00:13:50].

Shawn Flower: ... and that the layout does not make the table look too messy or crowded.

Shawn Flower: I'm going to show an example of a table that may be less than clear. I'm sorry, the other thing I had to talk about is we're going to avoid excessive decimals. We'll get there in a minute. This, I think that structurally, is ... Sorry, one of the participants says they're having a problem with echo and bleed through from participants. So, we'll fix that. Sorry about that.

Shawn Flower: Anyway, this table here, although it gives some really good information, I think the problem with it is it's so dark and so difficult to really ferret out these numbers. They just all bleed together. It's really hard to see. When you compare that to this set up where the numbers are all very clearly delineated, you see where they're from and it's just a much cleaner, much more pleasing graphical image to look at.

Shawn Flower: As I mentioned, the other thing we want to talk about is we want to keep our decimal places to a minimum. I thought this was a really interesting point. A lot of this presentation is actually based on a presentation that was conducted at a 2006 JRSA conference and this was one of her slides. I had not really thought about this before, but I really like it. Keep decimal places to a minimum. They imply false precision often where they're not significant. They pad the numbers making them look bigger than they really are and you should really only use as many decimal places as needed to break a tie.

Shawn Flower: For an example, you have two separate tables here on the left side and the right side and you can clearly see that the left side with four decimal points ... which I'm not even that crazy. I never go to four ... but with four decimal points, you have this seemingly granular examination of homicides of children under five when clearly the real message here, the bigger message, is that 68% of homicides of children under five are male perpetrators on male victims.
I just think that with fewer decimal places, it's easier to read. Again, the issue is you just want to make sure that the numbers are different enough that decimal places are actually required.

Shawn Flower: Let's talk about some of the table guidelines. Not surprisingly, we always want to make sure that we have informative titles. They should be clear. They should concisely describe the purpose or contents of the table and figure and should ideally draw the reader's attention to what you want him or her to notice. For example, something like Advantages and Disadvantages of Using [inaudible 00:17:07] Treatment for Homeless Veterans. This is a clear title, you know exactly what you're looking at. You can look at it and go, "Okay, I get it."

Shawn Flower: You also want to make sure that you have column heads, access to labels, figure labels, everything is clearly and appropriately labeled. Finally, you want to make sure that the information you provide in a table is not also presented in a graphic. For instance, you might want to list information such as demographics of a population in a table, or you might want to choose to present it in a pie chart, but you shouldn't do both in the same report or presentation. I actually find that sometimes I'll use a table and then use a pie chart to highlight something that goes beyond what's in my table, but I think it's not a good idea to have duplicative efforts there.

Shawn Flower: I want to talk about some graphics now and surprise, surprise, surprise, we want those to be self-explanatory as well. We're sticklers about this stuff. Simplicity and self-explanatory. You want to make sure that what you put on the table is self-explanatory and keeping with the clarity theme, don't use abbreviations. Avoid those acronyms whenever possible. I know we're in D.C. and we are acronym happy, but let's try to avoid those as much as possible.

Shawn Flower: We also want to write your labels from left to right and use proper grammar. Generally, don't use legends unless you're using maps. Now, here's a biggie, scaling is really important. It's really the key to make sure that your graphic represents your data accurately and does so clearly. So, I want to talk about some specific scaling guidelines.

Shawn Flower: First thing is you should include all of your data. That really means just start with zero. Now, of course, there's always exceptions to the rule, but let's just assume that if you're talking about a topic that you've included all the data that's relevant. You also want to make sure that you have any ticks or grids or labels. They should be easy to understand. Put them in metrics that people can grasp quickly, tens, hundreds, thousands.

Shawn Flower: Finally, you want to actually use as few labels as required to convey the message. Here, again, I have fallen down on the job in my reports. I have a tendency to put both the percentage and the bar graphs and label everything, overly label ... I'm an over-labeler, but I think I'm going to take another look at my work and see what I can do to change that.
Shawn Flower: I think, for me, the issue has been that I haven't trusted the reader to understand what I'm trying to say and I think that might an interesting test for yourself to say, "If nobody saw the text, would they really understand what this was about?" I think that's a great litmus test to look at it.

Shawn Flower: I want to talk next about use of scales in guidelines. I'm sorry in graphics. Here's a figure, and to be honest, it's really not necessary to have a graphic comparing only two numbers. If all you were reporting was the violent crime 2013/14 number, you actually wouldn't need a graphic. But, the bigger problem is that both the graphics should have the same scale.

Shawn Flower: If you look at this, you see that the violent crimes are up 2.6% but the largest increase, and that as aggravated assault, which was up 5.79%. The problem is don't they look exactly the same? It looks like the increase is exactly the same. So, it's really important to make sure that you scale things in the same way, that you've been clear about what your scale is, otherwise it's really difficult to eyeball the magnitude of your difference.

Shawn Flower: Again, there's real value, there's real elegance in keeping things simple. Too much information makes graphics hard to read. Now, I've seen a couple line charts that have so much interaction within the three lines or four lines that it's just a mess. There is a statistical process called smoothing and that's where a data set can be ... You can smooth a data set to create a function that attempts to capture important patterns.

Shawn Flower: This actually is beyond my capabilities in terms of presenting that information. I've never done it before, but maybe it's something we can think about for a future webinar is to go maybe a little bit more in-depth with some of these graphic examples and techniques. For today, we're just going to talk about the more basic stuff. So, the smoothing, apparently ... Is there a problem? Okay.

Shawn Flower: The smoothing is a technique that can help some of those trends that are in really noisy data easier to see, but we're not going to cover how to do that today. The other thing, and not a surprise to anyone, we want to avoid what's called non-data ink. I'm about to show you an example of this. Hang on a second.

Shawn Flower: Sure, we're going to answer a question. Ah, that's interesting. Okay. The question is, "What are your thoughts on keeping the same scale across bar charts when one has a large maximum value, e.g. 50, and the others have maximum values much lower such as 10? Using a maximum of 50 for values of 10 would make the bars extremely small. Is there ever an instance where you would not keep the scales the same?"

Shawn Flower: Again, I think this is art and science together. I guess I might be tempted to take those two data points and standardize them in some way, either make them a rate or
something else where you can put them on the same scale. If you don't do that, then the critical thing is to make sure you have discussed and explained why what you're displaying is different and how one should be cautious about what they're looking at.

Shawn Flower: So, I think it's always a ... What's the word I'm looking for? ... compromise, figuring out how you want to engage your reader and your audience and make sure that you're clear. I hope that answers your question. Then, Sam also points out that we have an example we're going to show up later ... Oh, he's already responded. There's a small multiples also it addresses this issue. We're going to talk about that in just a second. And, you're welcome.

Shawn Flower: Let's talk about focusing the ink on the data. Now, this is a very simple chart and honestly, the problem with this chart is the color of the line. I printed it out in black and white and I literally cannot see it, so I would choose a different color line. But, it's very simple. It's got a title or rather it doesn't have a title, which we'll talk about that in a minute too. It's got the line, it's got the years, it's got the percentage. We're good, simplicity.

Shawn Flower: Now, here's a lot of non-data ink that sort of makes our point. We got those tick marks. We have got the frames. We've got this 3-D line for what is really two-dimensional data and we've got all the stuff that really doesn't convey the message that you're interested in. This kind of response to not being able to see the line is not the way to go. It's better to use a darker color or find some alternative to filling up your charts and your graphics with all this non-data ink.

Shawn Flower: I've got a little bit of a question for you all. I have a little graph here and I'd love it if you could, just via chat, tell us, chime in on what problem or problems do you see with this figure. We'll take a few minutes just to figure that out. I consider this a graphic don't. I feel like we should have Jeopardy music or something. Anyone?

Shawn Flower: Okay, let's see. We've got ... Great. Could be labeled to save space, percent and facility instead of each one individually. The legend is confusing. Are the bars representing the same thing? Ding, ding, ding, ding, ding! Snapshot of what? Population? I'm loving these answers. This is great. All right, terrific.

Shawn Flower: Yes, I agree. This is a problem. There's no title. Okay, that's the first thing. We have no idea what this is about. The other thing is, and this may be a personal choice, but I tend to bring all of my percentages out to the top 100%. I think it's important for you to show the true scale of something and this only goes to 45%, but that's not even really the primary issue.

Shawn Flower: For me, it's the question of are the bars representing the same thing? The truth is, they're not. What this is showing is ... It's showing the blue lines are, say, the number of people that are the percentage of prisoners that were brought in and retained on bond in
August at facility one, two, three, and four compared to the percentage of prisoners that were held on bond over the entire year at those four facilities in 2005.

Shawn Flower: So, the problem with something like this is that when you put these two bars together, it really means you mean to compare them to each other. In this case, with looking at August versus the entire year and the variety across the facility, you just don't get that message. The intent really, when you're looking at bar graphs too, you want to compare across bars, not necessarily within the two bars. So, this could use a little bit of help.

Shawn Flower: This is what I consider better, but still not perfect. As you can see, this is by facility. This is defendant ... I'm sorry. This is released on bond August 2015 versus 2015 overall. The blue is the August, what happened in August. The red is the 2015. The chart goes all the way up to 100%. Both the axes are labeled and what we did here is that we made the year a line so that it's distinct and separate from the bar graph.

Shawn Flower: This actually displays the message. In some respects, this is interesting because it provides a context for those August numbers, but you have to really explain what this graphic is and really explain the message is that these are not the same thing. These are not comparable situations, but this is to provide a story.

Shawn Flower: I'm going to talk a little bit about just the different types of graphics and we're going to do a lot more graphical images rather than listening to me talk, which I know you'll all be grateful for. We have different types of graphics. They are graphs, charts, maps, drawings, photos and you use different types of graphics depending on the kind of data that you have.

Shawn Flower: If you have continuous data such as a scale over time, you're going to use maybe a different graphic than you would if you have categorical data, which is obviously classified into discrete categories such as race or gender. For continuous data, you want to use things like line graphs or areas charts or scatter plots or maps. So, I'm going to show you some examples of some line charts and other things.

Shawn Flower: Here's the small multiples we mentioned earlier. If you're trying to display many things on a single chart, you could use small multiples. You can use different colors for different lines. You can use different weights or shades in black and white. You can break lines up to show one on top of the other and you can reduce the number of lines shown to only those that you're really interested in talking about. If you have three lines or three data points that are exactly the same, you can simply summarize that in a footnote or some other way.

Shawn Flower: Here's an example of a small multiple. We have weapons arrest rate 1965 to 92. This is by age so we see the first chart in the upper left-hand corner is 16-years-old. The next one down is 17-years-old, 18-years-old, 19-years-old, et cetera. This is just an example of what
you could do if you had a number of different lines that you wanted to convey in a quick and easy fashion.

Shawn Flower: Here, you could do it by the different colored lines and, again, this is the same data, you're just presenting it in one line chart versus the multiple small charts. Another graphic you could use would be the area chart. This one, actually, we only included one series, but you could use this to compare two or more quantities. Often, the area between the axis and the line are commonly emphasized with colors, texture, or hatchings. Hatchings?

Shawn Flower: The next type of plot, one that I'm sure you all use a lot in looking at your data dispersion test, is a scatter plot. This is a mathematical diagram using the Cartesian coordinates to display values for typically two variables for a set of data. If the points are color-coded, you could actually increase the number of displayed variables to three. Each point has a value of one variable determining the position on the horizontal axis and the value of the other variable determining the position on the vertical axis. Again, it's really helpful if you're trying to just to determine how widely dispersed your data are.

Shawn Flower: Okay, so the next kind of continuous variable graphic you can use is a map. Here, this is a map with scaled values. I've also included in the resources, was part of the original presentation, there's a website called colorbrewer2.org that helps you pick the proper colors for your maps, but note that they define data a little bit differently. They called continuous data sequential data.

Shawn Flower: The other variation they use is called diversion data. When you have a point from which they diverge. I put that website on the resource page. Feel free to go and play with it, but with divergent data, the idea is that you use warm colors for one side of the point and cold colors for the other side.

Shawn Flower: The next set of data we want to talk about is categorical data, how you represent those in graphical images. You can use bar graphs, maps, and/or diagrams. With a bar graph, and again, here's an example, it's really best for the comparison of quantities. Use a bar graph when you have a continuous variable by a categorical variable or when graphing classes such as age ranges or race or other sorts of things.

Shawn Flower: You can also use either horizontal bars or vertical bars. It's really largely personal preference, but horizontal bar charts are really good in particular when your category names are long and the orientation of the chart allows the text to be placed from left to right as most people read thus improving the legibility of the information you're providing. They're also good when there are a large number of different categories and there's insufficient space to fit in all the columns required for a vertical bar chart across the page.
Shawn Flower: I also tend to use horizontal bar charts when I'm dealing with data that's select all that apply and I want to give a list and I sort the list by bigger to smaller and it comes out in this nice, graphical image, which is very quick to note whatever's the most selected on the list. The other I just want to mention is that in Excel, a vertical bar chart is called a column chart while a horizontal chart is called a bar chart. I don't know why, but there you go. That's your tip for the day from JRSA.

Shawn Flower: Okay. Again, maps you can use that for categorical data and they should be presented in contrasting colors. The ColorBrewer 2 calls this type of data qualitative. So, you obviously have the yellow color for those who are 17 and pink for 15, et cetera.

Shawn Flower: The last type of graphic that I'm going to show you is the diagram. One of my actual favorite diagrams is the BJS Criminal History Flowchart. If you all haven't seen that, it's a wonderful example of watching the flow of the criminal justice system. Here's a diagram looking at drug arrests in New York versus Washing D.C. This is what's called a chart-like diagram, which is basically taking a collection of items and expressing the relationships between those items. We see them all the time.

Shawn Flower: So, these are the types of graphics that you can use to create effective presentations. I'm going to actually turn it back over to Laura because she's got some more tips for you on how to do effective presentations.

Laura Gerhard: Hello, everyone. This is Laura and I know that we're getting to the top of the hour. It's getting close to 3:00 and we got started a little bit late, but we just have a few more things to go through and they're interesting so we're hoping that you'll hang on.

Laura Gerhard: Okay, we're going to talk about tips for effective presentation in a few different categories. We're going to talk about graphics in general, photos, and icons. We're going to show a couple of examples. We're going to talk about font type. We're going to talk about callouts, which are ... Callouts are the short bursts of text that draw attention to key points in a report. And, we're also going to talk about infographics, which is really a visual presentation of information in the form of a chart, graph, or other image that combines a lot of complex information and makes it easy to understand.

Laura Gerhard: Let's start with graphic presentation. The reason graphics are important in a report or a presentation is because of the way the human brain works. Humans primarily get their information about the world through their eyes. This is called the Pictorial Superiority Effect, which essentially says that people remember pictures better than words. This effect has been demonstrated in many experiments and using many different methods.

Laura Gerhard: Another way of saying it is that vision dominates and so by using graphics it's easy for your participant or reader to understand and you can use the graphics to
emphasize certain content. You can also create a visual theme that then if you want to repeat those graphics throughout the report or presentation, you can create a visual theme throughout by doing that.

Laura Gerhard: Here's an example of a research report that was done by Urban Institute that uses a photograph to introduce their 2014 report on estimating the size and structure of the underground commercial sex economy in eight major U.S. cities. To me, this photo, which introduces the report has ... It's impactful. It's memorable and it's also communicative. It sets the tone for what you're about to see in the report. It really shows you something that would be difficult to communicate in just a few words.

Laura Gerhard: Another graphical way to present information is through using icons, which icons are symbols used throughout your report that organize the information. They really provide the reader with a mental organizational structure. They facilitate quick comprehension and they also can be repeated to reference details and also to create a visual theme. So, let's look at some examples of this.

Laura Gerhard: Here's an example of an icon that was used in JRSA literature that I think facilitates quick comprehension because it tells you in an instant that the information that you're seeing is national information. Then, when it's used also in conjunction with state icons, it tells you immediately what information is statewide and what information is nationwide. If you repeat these throughout your report, it also creates that visual theme that we're talking about.

Laura Gerhard: Here's another example also using JRSA literature. In this case, the housing report that uses icons to denote families, men, teens, and then teen girls and teen boys. It facilitates fast comprehension as to who is being served by what agencies instead of spelling that out in text. It also has an emotional context in that it reminds the reader that we're talking about real people.

Laura Gerhard: We're going to move on to font type. Type is really the shape of individual letters and numbers that contribute to legibility in different contexts. There's two different basic categories. Most of you know this probably that there's serif and sans serif. Serif is a Latin word that means little feet. The serif font is used for reading especially in lengthy smaller print because the feet create an almost continual line across the bottom of a line of text that actually facilitates the reading process.

Laura Gerhard: Whereas sans serif is used for titles, headings, short bursts, and callouts or short bursts of information. I also want to note here that many state agencies may require the use of a specific font or formatting for their reports so that you don't have much discretion to use different fonts. That may be the case. Also, just as a cautionary note, beware of fonts that are too casual or childlike.
Laura Gerhard: People that are really into fonts say that each font has a personality of its own and that you want to be aware of the personality that you're writing or presenting in to make sure that it coincides with the material you're presenting. You also want to be aware of fonts that interfere with legibility because, as we said earlier, we want your audience to be engaged as well as to make the information easier to understand. If we're writing with an illegible font, we're not exactly doing that.

Laura Gerhard: Let's talk about callouts. So, callouts are those short burst of text that draw your attention to a key point in an article. They can be used for emphasis and you can adjust the font, either the font size and/or the color to distinguish from the main content. Here's an example of JRSA literature that uses, you can see, the United States, the national icon, as well as a callout, which is set aside from the rest of the text and is used for emphasis and is using a different text color.

Laura Gerhard: Finally, I just want to talk about the infographic. As we mentioned, the infographic, it's a relatively new term that we hear these days referring to graphical presentations of data. The infographic is a visual presentation of information in the form of a chart, graph, or other image accompanied by minimal text intended to give an easily understood overview often of a complex subject.

Laura Gerhard: If we look at an example here ... Here's an example from the mass transit website that shows ... It's doing some color-coding and it's showing in alphabetical order the different stations and different details about those stations. While it's helpful, especially if you know exactly which station to go to, it doesn't really give you a good idea of the scope of the system.

Laura Gerhard: So, here's a ... Whoops, went too fast. Whoops. There we go. Here is an infographic that actually combines an awful lot of complicated information but because of the design, it's simple to understand. It shows us how the different metro lines intersect with each other and where the different lines go. It also includes symbols to indicate if there's parking at the metro stop and if there are other types of transit options.

Laura Gerhard: Okay. We have one more and then we go to our summary. Here's another example of an infographic but one that is criminal justice related. It was pulled from materials from the sentencing project. It's putting into context the scale of the problem of imprisonment by gender and race in a very simple but effective way. If we look at this, we can see that men have a much higher chance of ending up in prison than women, one in nine compared to one in 56. They use color and scale in this example to make their point. I think it's really effective.

Laura Gerhard: Okay, so that's it for the detailed slides. I'm going to turn it back over to Shawn to summarize.

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Shawn Flower: Okay. As you’ve already heard us say, but let's say it one last time, our goal is to highlight the data. It's to let the data lead you to the best method of your presentation. You should strive for clarity in all elements of your presentation or report and also, you need to do the work for your audience so they can easily understand your point.

Shawn Flower: Before I mention a final reference to some resources, we did get a great tip from one of our listeners who advised that given 8% of the male population is color blind, that we should actually instead of going with color, we should look at changes in intensity. This person provided a link to a site and we will add this to our presentation so that you can take a look at that as well.

Shawn Flower: Lastly, I did want to talk about some additional graphical displays that you can use. One thing that struck me for this audience, in particular, that might be of interest was stacking confidence intervals to get a good sense of how different results compare to one another. This is often used in meta-analysis or you could use it to compare results of something across counties or states. I included in the resource section a link to a how-to guide about how to graphically create those and display those confidence intervals.

Shawn Flower: That is it for me. I'm not going to turn this over to Erin and thank you all for coming today.

Erin Farley: Hey, first I'd like to take a moment to open it up for any additional questions that anybody might have. We'll give one minute to allow anybody to type that in. While I do that, I would also ask that we're going to open up the polling option here and ask people to complete the few questions that we have for you. That would be greatly appreciated.

Erin Farley: I would also like to thank Shawn and Laura as well as everyone in attendance for joining us today. We hope that you enjoyed today’s presentation and will also join us for future webinars. Our upcoming webinars will include simple linear regression. That's going to be next month and that's going to be presented by Doctor Ronet Bachman from the University of Delaware. She will also be presenting in December on multiple linear regression.

Erin Farley: In January, we will schedule ... It's not specifically scheduled, but it will be sometime in January, Shawn Flower and Dan O'Connell from the University of Delaware, they will be co-presenting on logistic regression. Then, we will also have one in the new year regarding exploratory data analysis. Let me go back and see if anybody has asked any questions. Give me one moment.

Erin Farley: Let's see, it looks like we may have a comment. It says the font type that is visually helpful varies by medium. Serif fonts are difficult to read on a monitor, especially low vision and older readers. This is important when so much information is conveyed electronically
and not read via print where serif fonts can be helpful. I have to reformat almost everything especially emails, so please see ... and, there's another link.

Erin Farley: We really appreciate that. I think that gets back to the point of who's your target audience, what is the most predominant way you want people to read your report, whether it's going to be printed or electronic. That might actually impact the font that you utilize so thank you for those links and we will be sure to include them in the resource section.

Erin Farley: We will leave it open for any possible additional questions and don't forget to complete the polling. Thank you so much and have a good afternoon. Oh, we do have another question. Should line graphs be avoided for information that is not intended to appear as a trend?

Shawn Flower: I don't know. That's a really good question. Is there anyone in our group that's still online who maybe could answer that question for us? The question again is, should line graphs be avoided for information that is not intended to appear as a trend?

Speaker 7: Hi, this is [inaudible 00:52:35]. We do have one comment that one individual cannot see the poll. It does look like we are seeing people who are responding to it. If you may not be familiar, it's a tab, it should be a tab up on the upper right-hand corner of the screen. Participants, it should be something similar to ours, I believe, Participant Chat Polling. You might want to try to click on one of the alternative tabs and see if that will take you to the poll.

Speaker 7: Okay, Stan, a colleague of ours, says that "I think the lines do imply change from one point to the next and sometimes people use them when they plotted only points." Oh, another participant said, "I think they should be avoided. They almost always imply a trend in the audience's mind." Okay, then we have another individual, "I say no to using the line graphs for anything other than trends otherwise the reader may interpret a series where none exists." Okay. Thanks, guys.