**Probability & Statistics My Field: Civil Engineering**

[Applications of Statistical Methods in Civil Engineering (Links to an external site.)](https://www.cpp.edu/~rosenkrantz/prinfo/civileng.htm) by Prof. Don Coduto, Civil Engineering Department, Cal Poly Pomona. On this page Professor Coduto provides a way in many specialties of civil engineering that statistical methods can be applied.  These specialties include: Traffic/Transportation Engineering (multiple examples), Surveying and Mapping, Structural Engineering, Earthquake Engineering/Seismology, Hydrology, Environmental Engineering, Geotechnical Engineering, Sanitary Engineering, Coastal and Port Engineering

Applications of Statistics and Probability in Civil Engineering Proceedings -  the proceedings book is from this conference is available electronically for 2003-20014. To search for this use the Google Scholar search option on the USF website.  When you open it there is a link for USF embedded. The 2011 edition includes chapters on: risk assessment, bridge traffic loading, decision analysis, life-cyle cost analysis, maintenance and safety of aging infrastructure, natural hazards, timber structures, seismic hazard analysis, modeling tropical storm risks, geotechnical irsk and reliability, marine energy, risk and reliability for interdependent infrastructure systems, [The Use of Statistics in Civil Engineering and Real Life (Links to an external site.)](https://www.slideshare.net/EngrHabiburRehmanCha/use-of-statics-in-civil-engineering-and-in-real-life) by Habib ur Rehman, Civil Engineer at Faisal Colony Larkana.  In this slide show, starting on slide 18 are a number of detailed examples of the use of statistics in Civil Engineering.

**Credible Sources: Determining A Reputable Source**

There is a commonly referenced guide for determining reputable sources that will remain important for you as a professional, as you never want to be embarrassed by sharing inaccurate or false information. That guide is the **CRAAP Test.**

* **Currency:**Is the information/article you are looking at recent enough to be relevant.  This is not a specific date but should be examined based on the specific topic (e.g. There is much discussion going on around the Spanish Flu now, some of which may be relevant -- will our economy ever recover? -- some may not -- How were patients with the Spanish Flu treated?)
* **Relevance:**Is the information/article about what you are looking for input on? Specific and focused.
* **Authority:**Does the source of the information/article have expertise on the topic being discussed? (e.g. Does the person presenting information have expertise to talk about a particular aspect of the pandemic?)
* **Accuracy:** Is the information based on solid, accurately interpreted, data that is a reasonable sample for what is being evaluated?
* **Purpose:** Why does the information exist?  If the information exists to sell or as propaganda, it may still be good but you have to ask more questions

**Some Specific Resources that can be used for this class:**(Articles must be in English)

* **Reputable Newspapers --**What do I mean, while most news outlets are now described as left- or right-leaning, there is a further distinction that would make them not credible, which is when their priority becomes to promote a particular message at the expense of fact-checking.)

Reputable sources: ***The Wall Street Journal, The New York Times, The Washington Post, The Guardian and the Financial Times****.  (connected to these are the wire services: The Associated Press, Reuters, Bloomberg News.*

Sources to avoid that are known to have a skew right *National Review, and The Weekly Standard,*and to the left*The New Republic and the Nation.*

* **Reputable News Magazines -**Some examples of these types of Publications: *The Economist,  Forbes,  Newsday, The Atlantic, The New Yorker,  Foreign Affairs*,
* **Online News:**Many of the sources above have online material that is well done and credible that is not in the print publications, but only online.  Additionally there are now sources that are primarily if not totally online (BUT BE CAREFUL):

Reputable sources: Politico, Huffington Post

* **Think Tanks:**As with news outlets you need to be careful that the think tanks priority is on well-documented information and not a political adjenda.  The [Global Go To Think Tank Index Report (Links to an external site.)](https://repository.upenn.edu/think_tanks/) can help with this

Reputable Think Tanks: Brookings Institution, Carnegie Endowment for Internation Peace, Bruegel, Center for Strategic and International Studies

Think Tanks with Political Agendas: The Heritage Foundation (right) and the Center for American Progress (left).  This is not to say that some good things do not come from these sources BUT your audience may be more skeptical of their information, and their focus will be to discuss topics and provide information to support their political agendas.