ART OF STATISTICS assignment for Dr. Lesser's fall 2018 STAT 1380

Instructions: Create a song, poem, or video (just ONE) and submit it (along with the DOCUMENTATION FORM below) to me using the Course Messages system within Blackboard. The **due date** is 5pm, Wed. November 21, 2018 (no late submissions will be accepted even if Blackboard itself is down for a day, so plan ahead to allow for technology challenges). You may do this as an individual, pair, or trio, but if you have partners, you each still independently fill out the **DOCUMENTATION FORM**, so that you each do your own reflection, etc.

CHOOSE ONE OF THESE THREE OPTIONS: SONG, POEM, or VIDEO

A **song** may be a parody or original (in other words, the lyrics must be original, whether or not the music also is original), and is also allowed to be a rap, but should not exceed 3 minutes in length (so don't get too carried away with long intros, solos, choruses repeated three times in a row, etc.), but not shorter than around 45 seconds. You'll upload to Blackboard Course Messages the **Documentation Form**, an **MP3 file** of the song being sung (whether it's vocals only or vocals with instrumentation) and a **Word or PDF file** of the lyrics.

A **poem** may rhyme (if done well) but may instead use "free verse" so that constraints of rhyme or rhythm do not keep you from choosing the best words; length should be what the poem needs to be to do its job, but probably something between 12 and 100 lines. You'll upload the **Documentation Form**, and a **Word or PDF file** of the poem.

A **video** should not exceed 3 minutes and can be a "song video" or some other type of video such as an animation/skit, story, one-act play, or mini-movie. You'll upload to Blackboard the **Documentation Form**, and the video as an **MP4 file** to our Blackboard course shell or provide a Vimeo or YouTube URL for your video (if you upload the video to YouTube, it's your choice whether to make your YouTube video private, unlisted, or public, as long as I can access it). Example of help you can find online about how to do this:
https://support.google.com/youtube/answer/57407?co=GENIE.Platform%3DDesktop&hl=en

Focus: Your work may be completely about one or more statistics concepts or it may be about just about any subject (in good taste) that you thoughtfully and artistically describe or explore using statistics metaphor or imagery -- using at least 8 of the words on the list below (you can use fewer than 8, but in that case there should be more novel or deep use of the words). Also, make sure there are some words from both halves of the course (in other words, don't just have all the words be from the material covered on the midterm). If there are words not on the list that you think should also count, feel free to ask me. For most types of art, it may be more cohesive if the large majority of the words you choose are related to a common topic (such as regression, sampling, experiments, or probability) rather than trying to hit every chapter of our book. Each statistical word should be used with intention so that it does not appear interchangeable with another word on the list. If a word can be used in both a statistical and a non-statistical way, you should make sure your work does not use it only in a non-statistical way if you want that word to count. It's okay to use a variation on a listed word (e.g., anonymous instead of anonymity) if that works better artistically.

Why: It's different, it's fun, it's creative. And it has real potential to help your learning! For example, the compact phrasing required by a lyric, poem, or rap forces you to more deeply engage with the concepts in order to boil it down to the essence, and this often not only consolidates your existing knowledge, but can also generate new insights.

Assessment: This optional assignment earns you up to **5 extra points** (on the finals week exam), as scored by an award-winning nationally-published creator of statistics creative items (your instructor!). And if there are at least 7 entries who give permission to be displayed/presented (in class or in the Bb shell), the one voted the best by the class gets yet an additional point. The following 4 dimensions will be equally weighted to determine your score:

* creativity/aesthetic quality (this refers to the creativity or originality of the underlying work or idea, *not* to the artistic quality of the execution; for example, if you submit a song, I am judging the lyrics and music itself, not how brilliantly you sang or recorded it, as long as it's intelligible)

* statistical content; this refers to making sure that concepts/terms are used in a way that shows correct understanding of content; also, the focus should not be on the instructor or the 1380 classroom experience (whether you think it's exciting, boring, fun, challenging, etc.) but should be on the statistics concepts themselves and should ideally include how they are used or encountered in the world.

* quality of and alignment with educational goal and assessment in steps #7 and 8 of the Documentation Form (i.e., is it something that would be likely to be helpful for students in future classes?) – it can't just have one or more content words mentioned in a generic manner, it needs to use them in a way that makes a connection to statistics concepts or properties, etc.

* quality of reflection in step #10 of the Documentation Form.

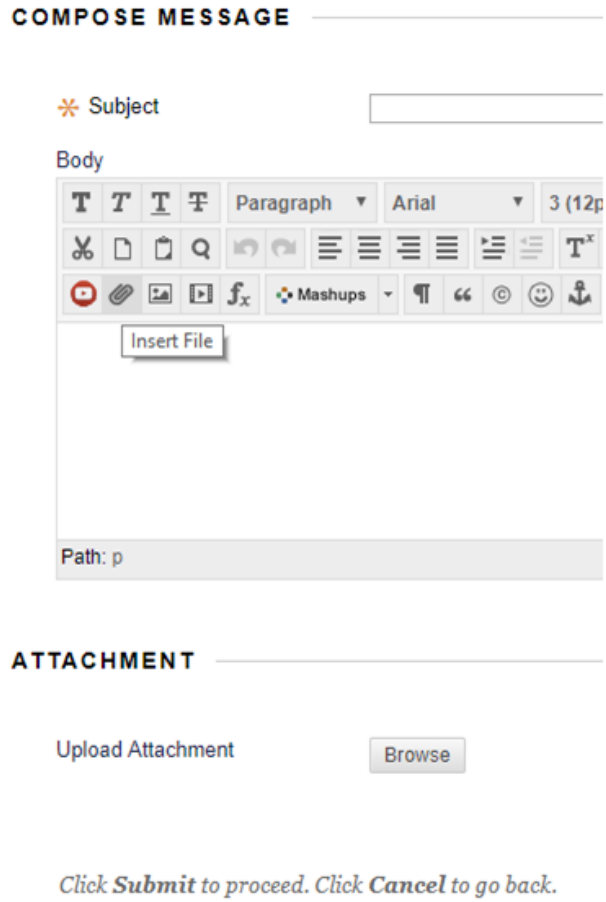
Examples: To get ideas of what is possible, you can browse a freely available, curated, searchable national CAUSEweb collection of statistics fun items (e.g., songs, poems, videos, etc.) at https://www.causeweb.org/cause/resources/fun/all? Not all examples in the collection are of equally high quality (e.g., a few items use statistics terms in a way that is mostly wordplay or generic cheerleading, and may not be very useful for learning). And, yes, many of the collection's items are by your instructor, and some items are by students! And you can enter your piece in the A-mu-sing fun item contest (https://www.causeweb.org/cause/a-mu-sing/) or just forward it to Dr. Dennis Pearl (dkp13@psu.edu) for possible inclusion in the CAUSEweb collection.

TECHNOLOGY:

Some videorecording software packages (many of which have a 30-day free trial) include Camtasia, ShareX, ScreenFlow, QuickTime, Kap, Office Mix, iMOVIE or Windows Movie Maker. For audiorecording, Garage Band or Audacity are common options many people use. Karaoke or royalty-free backing tracks can be found online. You (or your team) may let friends help you with playing instruments or using technology, but the actual poem, song lyrics, or underlying ideas in the video must be your own.

For uploading your work, you go into our course Bb shell, click on Course Tools on the left-hand sidebar, then click on Course Messages, then Create Message (where you compose a message for me and upload an attachment; it lets you upload only one attachment per message, so you may need to send one message for the Documentation Form and another message or two for the artistic item itself).

Subject: 2 ways to attach your document: Upload Attachment at the bottom or the paper clip icon within Compose Message



If you run into technical issues (e.g., submitting the work via Blackboard, identifying what software options UTEP supports), contact the UTEP HelpDesk (https://admin.utep.edu/Default.aspx?tabid=74092) or the Technology Support Center (https://admin.utep.edu/Default.aspx?tabid=74082).

Here are some links (from other educators who have had their students make their own songs/videos) that have some creativity or technology tips you may find useful:

https://docs.google.com/document/d/1rNL92ZHoMt7WEacvyt18nGPCkzd_2JHYfcqcJdfObGE/edit

http://www.isetl.org/ijtlhe/pdf/IJTLHE2238.pdf (see Appendix)

http://www.k12stemeducation.in.th/journal/article/download/60/97 (see Figure 3)

https://www.tandfonline.com/doi/pdf/10.1080/17513472.2014.950833?needAccess=true (see Section 2)

https://www.researchgate.net/publication/319464299_Songwriting_to_Learn_Can_Students_Learn_AP_by_Writing_Content-Rich_Lyrics/figures

Note: the instructor reserves the right to make small changes or clarifications to this handout if unforeseen issues arise

remember: You may do this as an individual, pair, or trio, but if you have partners, you each still independently fill out this DOCUMENTATION FORM, so that you each do your own reflection, etc.

DOCUMENTATION FORM for statistics artistic item:

If you did this as a team, items #1-8 and #11 should be the same for everyone on the team, but #9 and #10 must be filled out independently by each individual in the team.

1.) Type of statistics art being submitted (check ONE): ___song ____poem _____video

2.) Disclose any aspect of the entry that you may have adapted that is not your original, unpublished work. For example, if you wrote a song parody, include the title and lyrics of the original song that you rewrote and identify that original song's artist and songwriter.

3.) List all people who worked on this statistics artistic item and describe each person's specific contributions (in terms of technology, performance, writing, etc.):

4.) Title of artistic item:

5.) A one-sentence description or summary of the piece:

6.) List the statistics words/concepts in the artistic work:

7.) Educational learning objective: What should students know or be able to do after reading/watching/hearing your piece?

8.) Permission Questions (for each of these 5 questions, circle ONE of the 3 options A,B, or C):

- May I post your work so that students in our password-protected Bb course shell may see/hear it? a) no b) yes, if authors' names are stated c) yes, if authors' names are not stated
- May I show/present your work during a meeting of our class?

a) no b) yes, if authors' names are stated c) yes, if authors' names are not stated

- May I show/present your work during a meeting of a future/different class I teach?

a) no b) yes, if authors' names are stated c) yes, if authors' names are not stated

- May I show/present your work live during a presentation I give at a professional conference?

a) no b) yes, if authors' names are stated c) yes, if authors' names are not stated

- May I share your work as part of a professional journal article I might one day write?

a) no b) yes, if authors' names are stated c) yes, if authors' names are not stated

9.) State a multiple-choice question (and give its answer) appropriate for an instructor putting on an exam that would assess whether your piece was effective in helping a student demonstrate mastery of the learning objective you stated in #7.

10.) Reflection (up to one page double-spaced 12-point font): Reflect on your **inspiration** for the piece. Reflect on what you have learned about **statistics** (maybe some concepts came together in a new way, etc.) or about **yourself** (as a learner, creative person, etc.) from the process of doing this assignment. This will be assessed for the depth of meaningful reflection, not just a surface opinion about the class.

11.) If the artistic item is a poem or a song, please include the poem/lyrics here:

List of statistics concepts/words

Anonymity
Average
Bar graphs
Bell shaped curve
Bias
Blinding
Boxplot
Categorical variable
Causation
Census
Closed vs. open question
Confidentiality
Confounding variable
Continuous variable
Control group
Correlation
Data
Discrete variable
Ecological validity
Empirical rule
Expected value
Experimenter effect
Explanatory variable
Hawthorne effect
Histogram
Independent
Individuals
Interacting Variable
Interval variable
Margin of Error
Mean
Measurement
Measurement variable
Median
Mode
Nominal variable
Normal distribution
Observational study
Ordinal variable
Outliers
Percentile
Personal probability
Pilot study
Placebo
Population
Probability
Random assignment
Random numbers
Randomized experiment
Range
Ratio variable
Regression
Relative frequency
Reliability
Representative sample
Response (outcome) variable
Sample
Sampling (simple random, stratified random, cluster, systematic, multistage, convenience)
Scatterplot
Skewness
Standard deviation
Standardized score (z-score)
Stemplot
Time series
Treatment
Validity
Variability