Welcome to the USCOTS 2019 Birds of a Feather table on STATISTICS & CULTURE

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"Food for thought" starter questions

1.) How may connections with students' strongest language (in the case of many UTEP students, Spanish) help the learning of all students? Examples from my 2013 & 2016 *SERJ* papers:
* median (mediana) divides the data set in half and "media" is Spanish for half;
* confounded and confundido both suggest "all mixed up"
* "in the long run" vs. "en el largo plazo [in the long term]";
* "longest run of heads" vs.
  "el mayor número de caras sucesivas [largest number of successive heads]"

2.) How might making connections between content and cultural traditions be interesting and helpful? (Most UTEP students have Mexican-American heritage and enjoy when I do this with la lotería, Toma Todo, etc. They are also interested when I bring a Chanukah dreidel and compare and contrast with the pirinola (Lesser, 2010c).)

3.) How does culture relate to teachers and textbooks assuming student familiarity with manipulatives (cards, dice, coins, and their associated language), sports, activities such as skiing, etc.? Or that the textbooks' most common metaphor (the courtroom) for hypothesis testing will be correctly understood even by students who may be from a country that does not assume "innocent until proven guilty"? (Lesser, 2010b)

4.) What is an example of a data set you might use in class that is responsive to culture?
How might some version of a community walk (e.g., Rubel et al., 2011) be used?

5.) How might acknowledgment of culture help support an expectation or climate of equity and inclusion in your classroom?

6a.) Many mathematics educators explore/use "ethnomathematics" (there are conferences and journals in this area) and "culturally relevant mathematics". Why is it more rare to hear "ethnostatistics" or "culturally relevant statistics", especially given how much more important context is in statistics than in mathematics?

6b.) Lesser & Wagler (2016) notes an example of a "culturally relevant hypothesis test" of whether the mean number of seeds in a pomegranate (a fruit traditionally eaten on the Jewish New Year) is 613 (the number of commandments in the Torah). How would this work in class? What's another example?

6c.) What are cultural considerations involved in conducting a census? survey? experiment? (Lesser 2006, 2010a)

Some references (mostly from http://www.math.utep.edu/Faculty/lesser/ELL.html, which has most links)

Lesser, L. (2006). Book of Numbers: Exploring Jewish mathematics and culture at a Jewish high school. *Journal of Mathematics and Culture*, *1*(1), 8-31.

Lesser, L. (2010a). Equity and the increasingly diverse tertiary student population: challenges and opportunities in statistics education. In C. Reading (Ed.), *Data and context in statistics education: Towards an evidence-based society. Proceedings of the Eighth International Conference on Teaching Statistics*, Ljubljana, Slovenia. Voorburg, The Netherlands: International Statistical Institute.

Lesser, L. (2010b). The necessity of equity in teaching statistics. *Philosophy of Mathematics Education Journal*, no. 25. (8 pp.)

Lesser, L. (2010c). An ethnomathematics spin on statistics class. *Notices of the North American Study Group in Ethnomathematics* (*NASGEm News*), *3*(2), 5-6. http://nasgem.rpi.edu/files/2055/

Lesser, L. (2015). Learning language: A mathematics educator's reflection on empathy and privilege. *Teaching for Excellence and Equity in Mathematics*, *6*(1), 25-32.

Lesser, L., & Wagler, A. (2016). Mathematics, statistics, and (Jewish) culture: Reflections on connections. *Journal of Mathematics and Cultur*e, *10*(2), 127-156.

Lesser, L., Wagler, A., Esquinca, A., & Valenzuela, M. G. (2013). Survey of native English speakers and Spanish-speaking English language learners in tertiary introductory statistics. *Statistics Education Research Journal*, *12*(2), 6-31.

Lesser, L., Wagler, A., & Salazar, B. (2016). Flipping between languages? An exploratory analysis of the usage by Spanish-speaking English language learner tertiary students of a bilingual probability applet. *Statistics Education Research Journal*, *15*(2), 145-168.

Lesser, L. & Winsor, M. (2009). English language learners in introductory statistics: Lessons learned from an exploratory case study of two pre-service teachers. *Statistics Education Research Journal*, *8*(2), 5-32.

McCoy, L. P., Buckner, S., & Munley, J. (2007). Probability games from diverse cultures. *Mathematics Teaching in the Middle School*, *12*(7), 394-402.

Rubel, L.H., Chu, H., Shookhoff, L. (2011). Learning to map and mapping to learn our students' worlds. *Mathematics Teacher*, *104*(8), 586-591.

Wagler, A. E., & Lesser, L. M. (2011). Teaching statistics to culturally and linguistically diverse students. *Proceedings of the 2011 Joint Statistical Meetings, Section on Statistical Education* (pp. 821-830).