Analysis Tutorial Prospectus:

1. An informative title – Visualizing Large-Scale Geographic Gradients in Lakes of the United States
2. Research Question(s)
   1. How do standard lake water quality measurements like turbidity and chlorophyll vary geographically across the US?
   2. Do these variables correlate to land cover/ land use?
3. At least one objective stating what the code procedure is about and what the finished code  
   will hopefully do.
   1. Generate a map of the US which plots water quality values by location
   2. Generate corresponding plots of land cover and/or land use for comparison
   3. Possibly compare lakes to rivers to wetlands (<https://www.epa.gov/national-aquatic-resource-surveys/what-waters-are-included-national-aquatic-resource-surveys#nla>)
4. A few statements about your intended approach/methods

I plan to work with data from the National Lakes Assessment. This initiative has documented standardized water quality measurements for hundreds of lakes all across the United States. I will primarily be using ggplot in R to plot these measurement values by their GPS coordinates on a map of the US. I plan to generate similar plots with the same variables from rivers or wetlands for comparison, or potentially make connections between the lake variables and land use in the region.

1. At least 2 references from peer reviewed scientific journals related to your tutorial idea and  
   research question(s)

Galbraith, L. M., & Burns, C. W. (2007). Linking Land-use, Water Body Type and Water Quality in Southern New Zealand. Landscape Ecology, 22(2), 231–241. <https://doi.org/10.1007/s10980-006-9018-x>

Read, E. K., Patil, V. P., Oliver, S. K., Hetherington, A. L., Brentrup, J. A., Zwart, J. A., Winters, K. M., Corman, J. R., Nodine, E. R., Woolway, R. I., Dugan, H. A., Jaimes, A., Santoso, A. B., Hong, G. S., Winslow, L. A., Hanson, P. C., & Weathers, K. C. (2015). The importance of lake-specific characteristics for water quality across the continental United States. Ecological Applications, 25(4), 943–955. <https://doi.org/10.1890/14-0935.1>