

**GEOG 455 Exercise Six**  
**Alternatives for UW-Milwaukee Steam Shutdown**  
20 points

Name: \_\_\_\_\_  
Student#: \_\_\_\_\_

*The Problem*

Each year, UW-Milwaukee physical plant supervisors shutdown the steam for university buildings in order to do maintenance. Typically this is done soon after the end of the spring semester. The steam is used to both heat buildings and to run part of the air conditioning (chilling) system, **so the best time to have the shutdown is when buildings will require neither heating or cooling**. While political/practical realities won't allow for any actual changes in the date this is done, the situation seems ideal for exploring a theoretical climatic solution to this problem, i.e., "When is the best time to turn off the steam?" In this exercise you are going to explore **an alternative time period** (between the end of summer and beginning of autumn) and propose a "best date" (based on climatology) within that period for the steam shutdown.

*The Assignment*

I have provided you (in a SPSS file) with daily maximum and daily minimum temperatures (recorded at General Mitchell Field, Milwaukee) from day of the year 227 (approximately August 15<sup>th</sup>) to day of the year 319 (approximately November 15<sup>th</sup>) for the 1948-2003 period (56 years). Your assignment is to assess this data and make a recommendation of what date the heat could be turned off, based on climatology. The assessment should be in the form of a report to the UW-Milwaukee physical plant, including any data summaries or graphics you need to support your decision.

In preparing your report you will want to: 1) select an appropriate climatic indicator (temperatures below a certain threshold, heating degree-days, etc.)--you will probably want to experiment with a few before selecting a final one; 2) determine the 1971-2000 "normals" of your variable for each day in the day 227-day 319 time period; 3) review the trend of your variable over the entire 56-year period, and check if the last five years (1999-2003) are notably different from the normal period; 4) look for sharp breaks or thresholds in the climatic indicator that would be useful in making the decision to shutdown the steam (i.e., abrupt increases in the chances of cold weather--however you have defined it).

**All class members will have an opportunity to share their solutions on the last day of class.**