**Ski to Sea: Which sport leg is most important?**

The Ski to Sea race is a multi-sport relay race held annually in Whatcom County, Washington. The race consists of seven legs: cross-country skiing, downhill skiing or snowboarding, running, road biking, canoeing, mountain biking, and kayaking, with each leg representing a different outdoor sport. A team will consist of one person for each leg of the race, except for the canoe leg which has two paddlers per canoe. Racers are allowed to compete in multiple legs of the race. A team must have a minimum of three racers and a maximum of eight, with a maximum of three legs per individual. The canoe leg must have two participants regardless of the number or racers per team. The Ski to Sea Race does not allow individuals to complete all legs of the race.

Data: On github, go to stat\_289\_score 🡪 sampeacock23 🡪 module



1. Overall, which leg of the race shows the strongest positive correlation with the canoeing leg?
2. Between which leg and overall completion time is the correlation the strongest? Report the correlation.
3. Also, between which two legs is the correlation the weakest? Report the correlation.
4. Write a brief interpretation of the correlation between the strongest and weakest leg of the race and the overall completion time.
5. In general, what is a better indicator of a team's success in the Ski to Sea race, their performance in the running legs or the biking legs? Why do you think this?
6. How do the correlation matrices from 2009 and 2019 compare? Which race leg demonstrates the strongest correlation with the overall finish time in each of these years?