



THE CONSORTIUM FOR  
MATHEMATICS AND  
ITS APPLICATIONS

The 2016 MCM introduces a new modeling challenge – Problem C - that is best described as *Data Insights*. Problem C is intended to focus on and amplify specific elements of mathematical modeling challenges associated with data. In this sense, techniques stemming from statistics and pattern classification will play a larger role in creating a mathematical model on this problem than in previous contests.

While not a ‘big data’ challenge in the sense of teams needing to develop specialized computer science-based data handling algorithms and analysis techniques or have access to high performance computing platforms, the problem will provide teams with an opportunity to encounter real-world, challenging data that have interesting characteristics. Naturally occurring complicating factors such as data set size (but not big data), blend of data types, breadth of representation in data elements, cross-discipline sources, time series dependencies, censored or missing data, and others could present themselves depending on the specifics of the modeling problem.

#### MCM Problem C: *Data Insights*

- Teams will be given access to database files that will be made available from a public website.
- The database files will be compressed for size but the file size could still be 100mbs or more and teams should take this into consideration prior to choosing Problem C.
- Each zipped file may include the database files along with the data dictionary, data mapping file, and program code to create value labels.
- The database will be made available in multiple formats SAS, SPSS, STATA and CSV.
- Software such as Statistica, JMP, SAS, SPSS, Excel, R, Matlab or other applications may be used to aid in your solution but no one particular piece of software is endorsed or required. If specialized software or custom code is used to support the contest effort, teams should take care to clearly communicate an understanding of the mathematics and assumptions applied via tools and algorithms in the software.
- When submitting your final electronic solution you are NOT required to submit back the database file or any data for that matter. The only thing that should be submitted is your electronic (word or PDF) solution.

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