- The project is due April 24, 2022 at 11:59pm ET. No late submissions are accepted.
- The course project is an individual assignment. If you use part of someone else's work, you must include a citation for it.
- Pick a dataset and perform some sort of Bayesian analysis on it. Ideas for data: data you collected or from your lab, from a published paper or from the Internet, preferably in the broad area of Science and Engineering. The analysis performed must be Bayesian in some way.
- Make sure to credit the source of data or include a citation of it in your report. If the data are coming from a published paper, references should be provided or a pointer to the web source should be given. If the data file is small ($\leq$ 10mb) and not sensitive, feel free to include it.

Project Deliverables

Including the data with your submission is optional. There are **two** required deliverables which will be uploaded to Canvas:

1. A pdf write-up of your project. This should include an introduction, analysis, results and conclusion. You are free to create this in LaTeX, MS Word or whichever other editor you like. You are required to export it to pdf. There is no page requirement, but 4-7 page projects are fairly common.
2. Any code files related to your project. **You can use any programming language** to create these, but keep in mind they should be well-formatted and human readable. Note that in BUGS you may include the data directly in your .odc file, so two separate files are not necessary.

Example Projects

- There is a sample project available on the course website. Please read it carefully and observe the format of the paper. This is the primary example of what we are expecting.
- You may reference the Unit 10 lectures in the course, where Brani discusses and analyzes several different case studies using Bayesian methods. These would also be good projects.
- You may look at the examples BUGS provides (these are located in the install directory). From the 'Examples Vol 1' directory, the following are good examples:

`Rats:Normalhierarchicalmodel`

`Pump:conjugategamma-Poissonhierarchicalmodel`

`Dogs:loglinearbinarymodel`

`Seeds:randomeffectslogisticregression`

`Surgical:institutionalranking`

`Magnesiummeta-analysispriorsensitivity`

`Salm:extra-Poissonvariationindose-responsestudy`

- You are of course not limited to these. Any type of Bayesian analysis can serve as inspiration for this project. Please choose data and a topic that are interesting to you.

Grading and Evaluation

The Project is evaluated from 0 to 100 points. Creativity and originality are factors in high scores on the project. Typically the following rough guidelines are used:

- 100 points: Highly original work with good motivation and results clearly presented. May touch on topics outside of class, just like the sample project does.
- 95 points: Good project relying on ideas from the class or previous work to perform an analysis. May be a bit simpler than the above but the analysis is correct and results clearly presented.
- 90 points or lower: Very basic short project and/or there are errors in approach, techniques or conclusions.