# CSC480 Fall 2019 - Project Role Description

Mary Donahoo

I partnered with Kim Van Vleet to create a Student Retention Toolkit using R. I took the lead on the technical aspects of developing our R application itself. Kim developed the SQL code that was used to produce our source data. He also provided expertise in terms of the meaning of the data and helped to identify possible visualizations that could be included in the application.

* Installed R for Windows, RTools and RStudio on my laptop
* Via RStudio, created Shiny Web Application
* Working with standard shinydashboard structures in mind (header, sidebar, body), designed the general layout of our application
* Implemented the general layout design in shinydashboard code, including menus and submenus
* Imported retention data
* Created several summarizations of the retention data by specific data element, year and retained flag. The summarized data could then be filtered and displayed in various ways depending on user input.
* For Leaflet map (on State at Admit page) researched options for obtaining cartographic boundary information (shape file). Experimented with different spatial data files and ultimately selected US states file from the US Census Bureau because it included Alaska and Hawaii, where as some other spatial data files only included the contiguous 48. Imported spatial data.
* For each set of input controls and data visualizations associated with the submenu items in the Charts menu, identified input control(s) (if needed) and built visualizations. Connected input controls to visualizations as appropriate.
* Researched how to display a pdf file with the body area for a menu item (Help document). Implemented this in the code.
* Tested visualizations, comparing displayed results with source retention data.
* Periodically published updated application to shinyapps.io
* Provided project updates and walkthroughs to my project partner.