Data and science products are essential for clear communication and support of fisheries management. The Pacific Fishery Management Council (PFMC) relies on science-support from the Northwest Fisheries Science Center, however improvements in accessibility to many of the products and sources of information that inform decision making are needed. This project aims to enhance user accessibility to data and information by creating user-friendly software applications using the R package Shiny to help support management planning.

The project is made of two components:

1. Stock Assessment Prioritization tool: There are more than 90 groundfish stocks that require management through annual catch limits, yet only a small fraction can be assessed through use of a population model during each 2-year assessment cycle. Prioritizing and then choosing which stocks to assess is a major decision point in groundfish management. While the process, involving weighting multiple factors to determine prioritization of stocks, is fairly well established, the suite of analyses is currently available as an offline workbook where comparing results across species can be challenging. The development of a user-friendly tool would allow for better exploration of the factors under consideration and how those factors compare across species. The intern, working with the mentors, will build a Shiny tool to turn the workbook into an interactive graphical user interface. This would include species selection and sorting and visual presentation of the prioritization factors.
2. Data availability tool: One aspect of the stock assessment prioritization is summarizing the available data for each species. The data summary is used in tandem with the assessment prioritization by decision makers in order understand if sufficient data exists to support a stock assessment. The data summaries include the numbers of lengths, ages, and collected ageing structures by species and year from commercial (PacFIN) and recreational (RecFIN) fisheries, and from surveys (e.g., NWFSC West Coast Groundfish Bottom Trawl and the Hook & Line Survey). Beyond summaries, this tool would also allow the option to produce processed abundance and biological data for additional analyses and use in stock assessments.

We anticipate the intern will improve coding skills and become familiar with the information types and their uses in stock assessment models. The products created from this project will find immediate utility and could become a substantial contribution supporting West Coast groundfish fishery management planning and decision-making.