NAME: _

Select one of the projects below as your Project # 3.

1   Hemoglobin Changes in Anemia:

A new synthetic erythropoietin-type hormone, Rebligen, which is used to treat chemotherapy-induced anemia in cancer patients, was tested in a study of 48 adult cancer patients undergoing chemo-therapeutic treatment. Half the patients received low-dose administration of Rebligen via intramuscular injection three times at 2-day intervals; half the patients received a placebo in a similar fashion. Patients were stratified according to their type of cancer: cervical, prostate, or colorectal. For study admission, patients were required to have a baseline hemoglobin less than 10 mg/dl and a decrease in hemoglobin of at least 1 mg/dl following the last chemotherapy. Changes in hemoglobin (in mg/dl) from pre-first injection to one week after last injection were obtained for analysis in dataset `cancer.dat`.

Question: Does Rebligen have any effect on the hemoglobin (Hgb) levels? Primary interest is whether the Active treatment shows any effect on hemoglobin relative to any effects shown by the Placebo group. Start with obtaining the summary statistics: mean, stdev, sample size, plots, univariate analysis etc.

Use the dataset: `cancer.dat`

2   Memory Function:

Two investigators conducted a clinical trial to determine the effect of two doses of a new therapeutic agent on short-term memory function. A single oral dose of the test preparation was administered to subjects, who were then asked to recall items one hour after exposure to a list consisting of 15 items. The number of items correctly identified are shown in the data. A placebo group was included as a control in a parallel-group design.

Question: Is there any difference among the mean dose groups for each center? Is the Dose Group effect significant indicating different mean responses among the dose groups? Start with obtaining the summary statistics: mean, stdev, sample size, plots, univariate analysis etc.

Use the dataset: `memory.dat`

3   Alzheimer's disease test:

Patients were randomized to receive one of two daily doses (L=low dose or H=high dose) of a new treatment for Alzheimer's disease (AD) or a placebo (P) in a parallel study design. Each patient was to return to the clinic every 2 months for 1 year for assessment of disease progression based on cognitive measurements on the Alzheimer's Disease Assessment Scale (ADAS-cog). This test evaluates memory, language, and praxis function, and is based on the sum of scores from an 11-item scale, with a potential range of 0 to 70, higher scores indicative of greater disease severity. The primary goal is to determine if the rate of disease

progression is slowed with active treatment compared with a placebo. The data are given in `alzheimer.dat` (a decimal point (.) represents missing values).

Question: Is there a difference in response profiles over time among the three groups? Start with obtaining the summary statistics: mean, stdev, sample size, plots, univariate analysis etc.

Use the dataset: `alzheimer.dat`

4   Symptom Relief in Gastroparesis:

Patients with severe symptoms of gastroparesis were randomized to receive an experimental therapy (A) or dietary changes with 'watchful waiting' (B). Response was measured after 7 days, using the following scale: 1=no response, 2=some response, 3=marked response, or 4=complete response, based on the degree of symptom relief. A patient's history of severe gastroparesis, thought to be an important covariate, was also recorded as 'no prior episodes' (0), 'one prior episode' (1), or 'more than one prior episode' (2). The data are shown in `gastro.dat`.

Question: Is there any difference in response between the patients who received the experimental therapy and the untreated patients? Start with obtaining the summary statistics: mean, stdev, sample size, plots, univariate analysis etc.

Use the dataset: `gastro.dat`

5   Triglyceride Changes Adjusted for Glycemic Control:

The new cholesterol-lowering supplement, Fibralo, was studied in a double-blind study against the marketed reference supplement, Gemfibrozil, in 34 non-insulin dependent diabetic (NIDDM) patients. One of the study's objectives was to compare the mean decrease in triglyceride levels between groups. The degree of glycemic control, measured by hemoglobin A1c levels (HbA1c), was thought to be an important factor in response to the treatment. This covariate was measured at the start of the study and is shown in the dataset `triglyceride.dat`, with the percent changes in triglycerides from pretreatment to the end of the 10-week trial.

Question: Is there a difference in mean responses between supplements? Start with obtaining the summary statistics: mean, stdev, sample size, plots, univariate analysis etc.

Use the dataset: `triglyceride.dat`