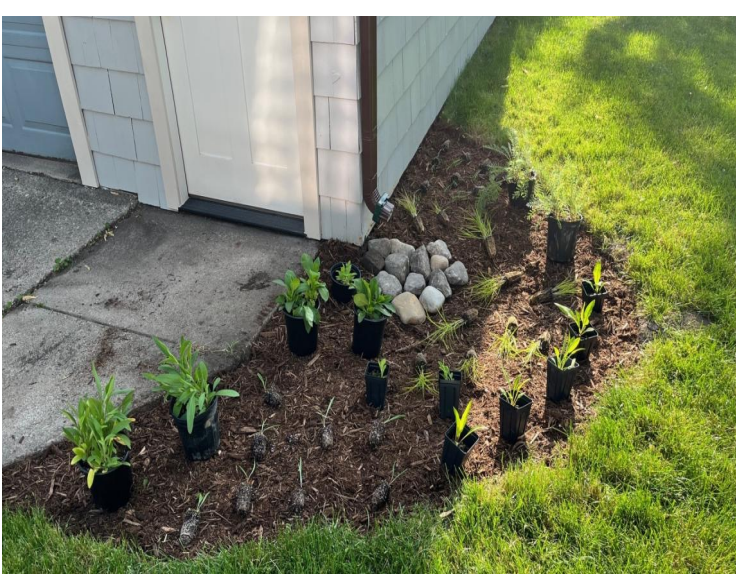# Data Consulting Hub

Priscilla Chen, Miriam Crisman, Professor Stacy DeRuiter. Calvin University, Grand Rapids, Michigan

**CALVIN UNIVERSITY** 1876

## What *is* Data Consulting?



### What Modulates HIV Infection Rates?
*Biology*
**Faculty: A. Shen**

We helped formulate, fit and visualize beta regression models for data from laboratory experiments. The approach allowed assessment of factors affecting HIV infection rates while accounting for differences between cell donors.
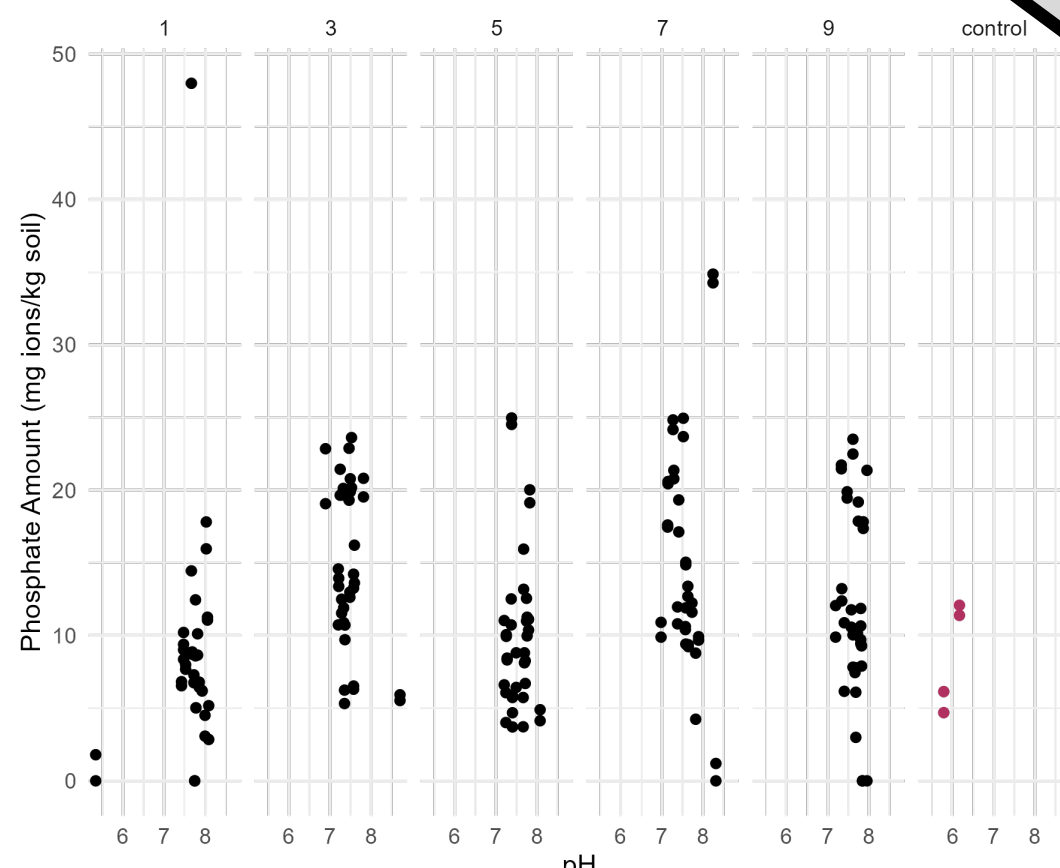


We used generalized linear models to explore whether Iron, Phosphate, Cadmium, Chromium, Chloride, Iron, Phosphate and Zince might collect over time in rain garden soil, while controlling for differences between sites, and soil pH.



### Do Contaminants Collect in Rain Gardens?
*Biology, Plaster Creek Stewards*
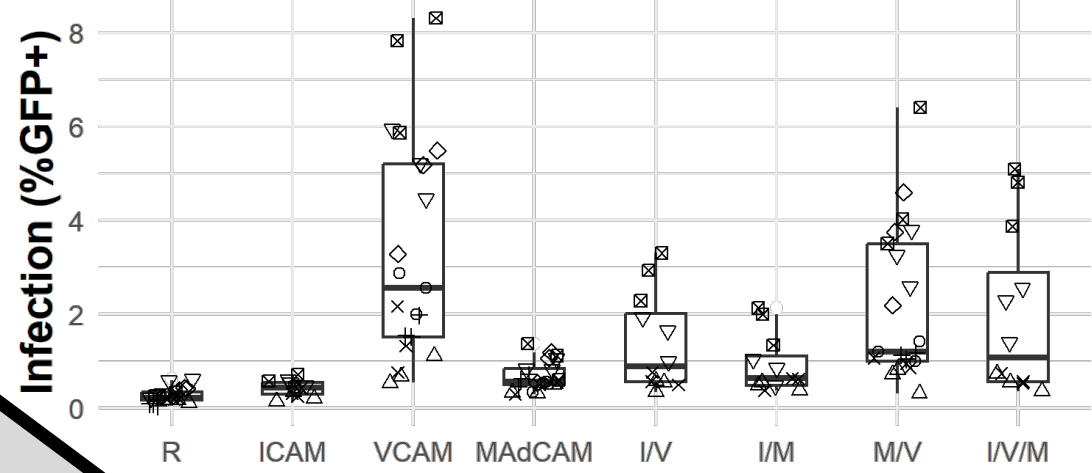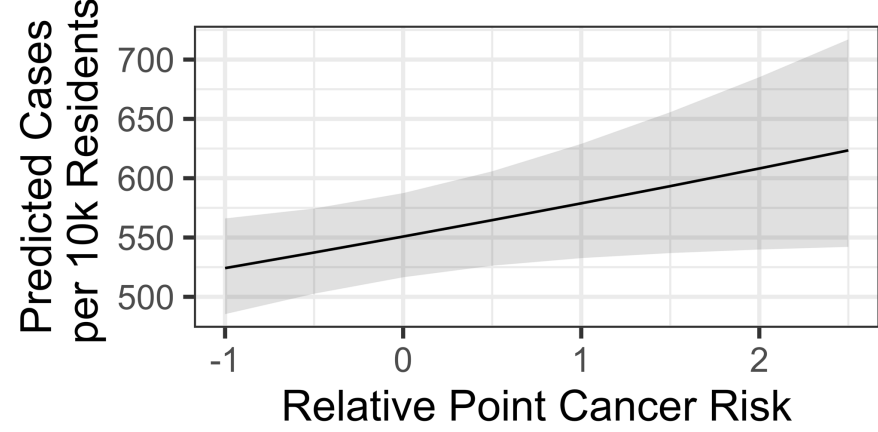**Faculty: D. Warners, Student: Cassandra Demlow**

### Applied Regression Workshop

Prof. DeRuiter & Prof. Leslie New (Ursinus College) led a professional development workshop on applied regression modelling in R. We taught, prepared materials and served as hosts. Vos Endowment funds supported the event.



To enable efficient scheduling for Speech Pathology clinicals, we developed a score system in Excel that guides pairing students with clients.

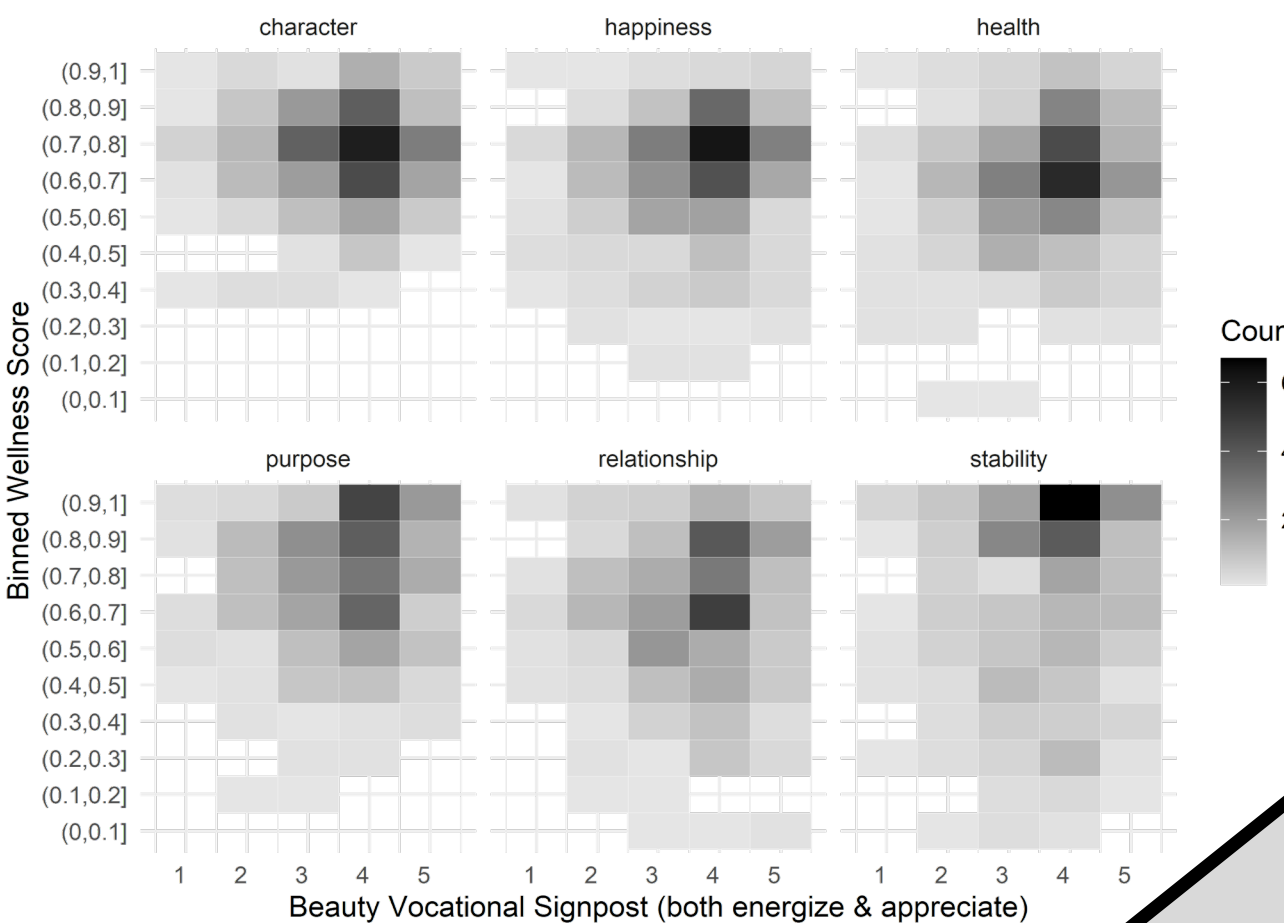| Student ID | Day Off | Score |
|---|---|---|
| addy | Wed | 1 |
| 2 | Mon | 1 |
| 3 | Tues | -1 |
| 4 | Wed | 0 |
| 5 | Mon | 0 |
| 6 | Tues | -1 |
| 7 | Wed | -1 |
| 8 | Mon | 2 |
| 9 | Tues | -1 |
| 10 | Wed | 1 |
| 11 | Mon | 0 |
| 12 | Tues | -1 |
| 13 | Wed | 1 |
| 14 | Mon | 1 |

### SPAUD Scheduling Helper,
*Calvin Speech & Hearing Clinic*
**Staff: T. Krampe**

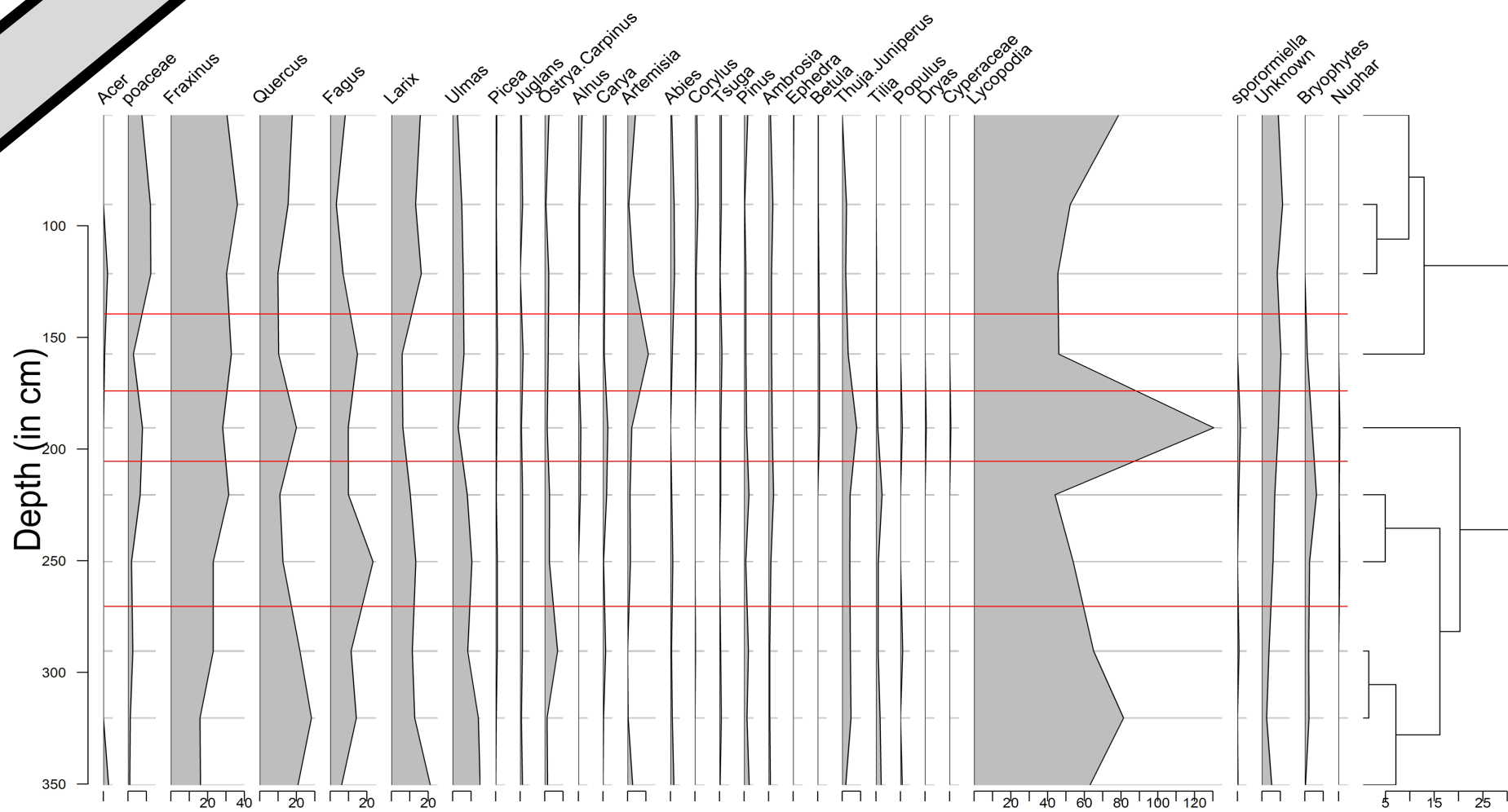### Do Vocational Signposts Correspond to Wellbeing?
*Communication, Career Center*
**Faculty: C. Mattson, D. Wilstermann**

We fit linear models to survey data to understand how progress toward "vocational signposts" of beauty, truth, justice, freedom, excellence, truth, spirituality and relationship (inspired by N.T. Wright) might correspond to a standard 6-domain wellbeing scale.



We provided support to organize field data and make professional stratigraphic graphs using the *rioja* R package.
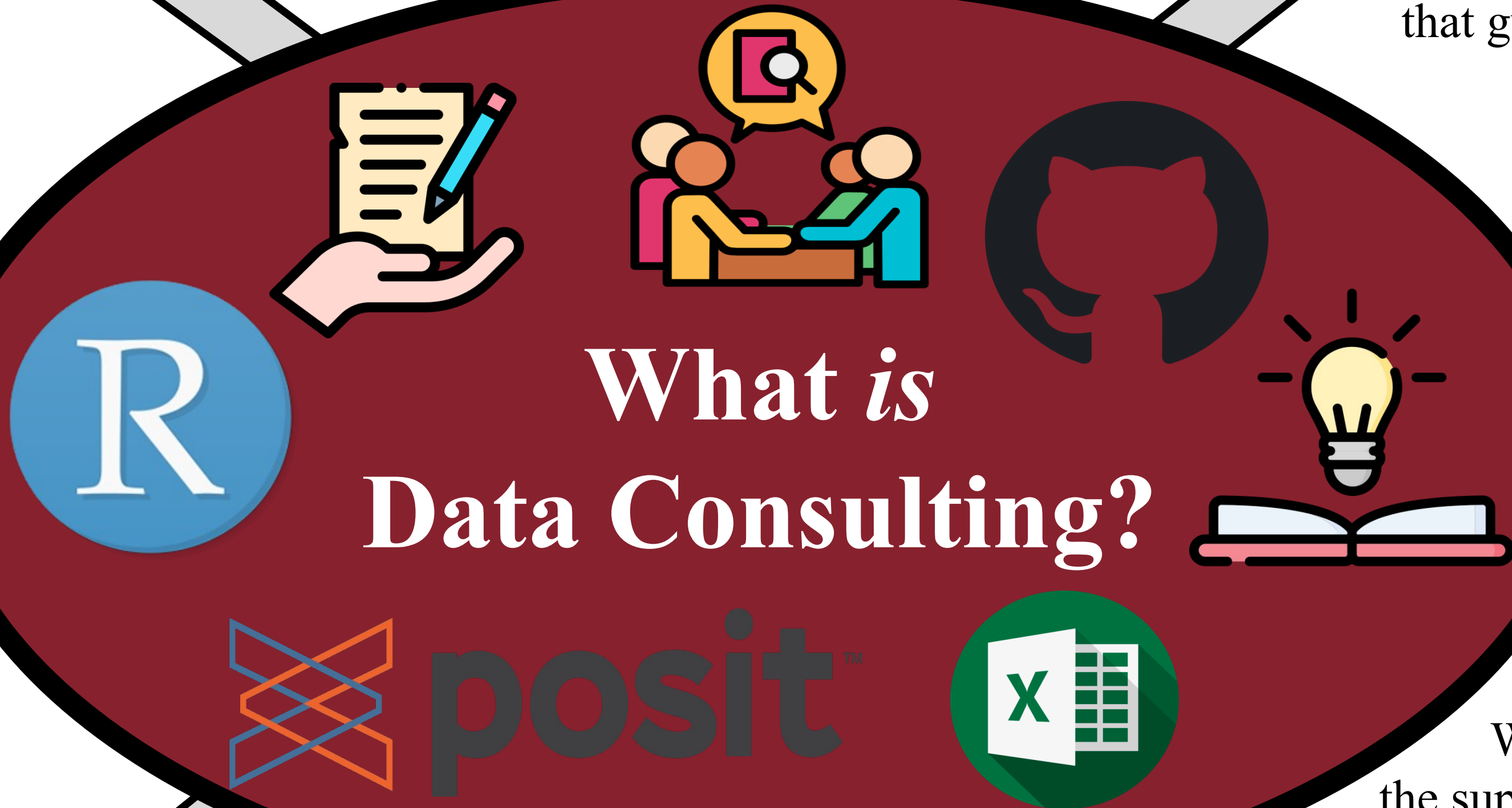


### Can We Use R to Visualize Pollen Stratigraphy?
*Geology, Geography, and Environment*
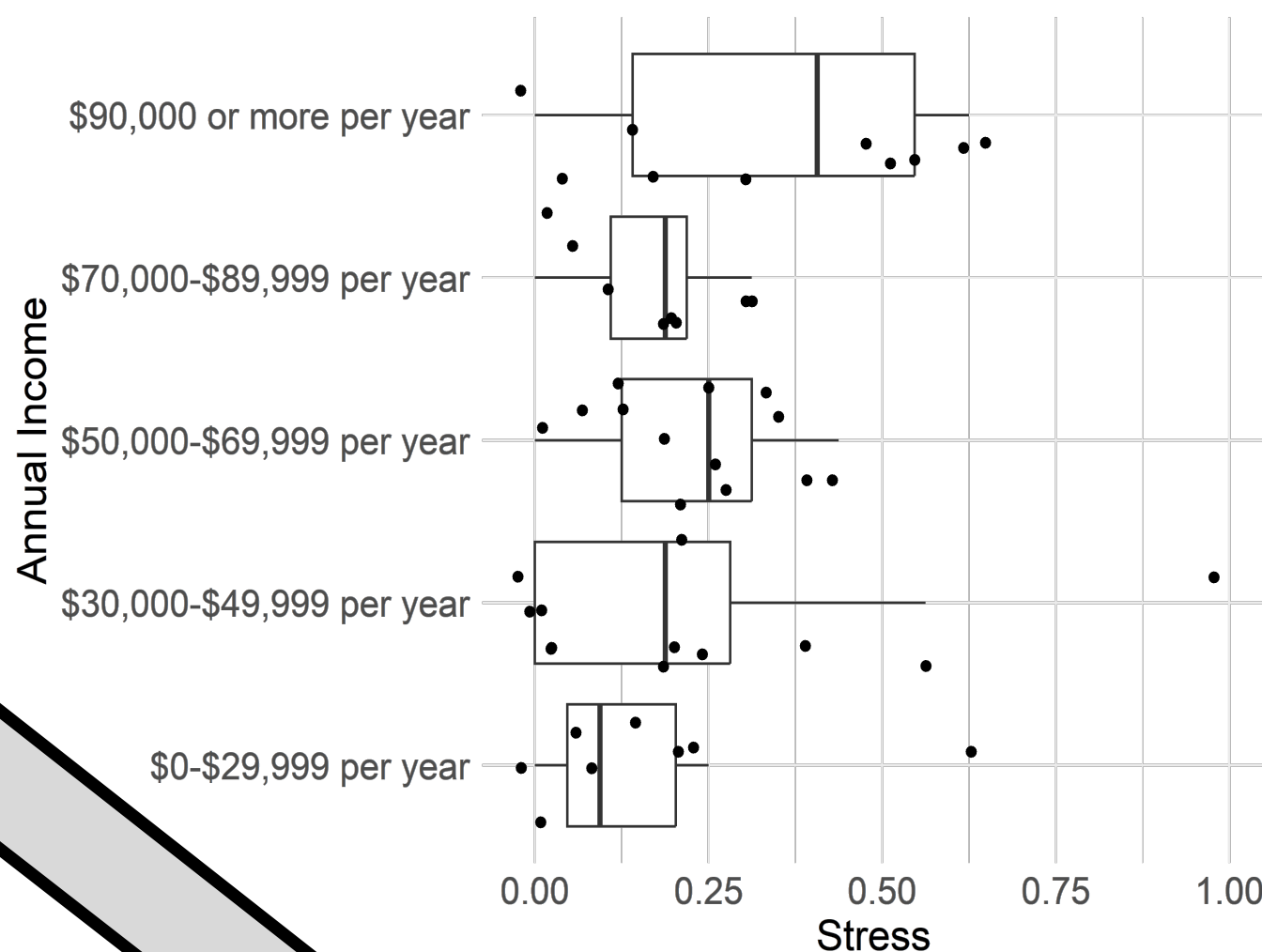**Faculty: M. Higley; Student: Carl Martin**

### What Supports or Stresses Informal Caregivers?
**Faculty: J Yonker, T. Adekunle, *Public Health***
**Students: Jamie Lee, Meral Moawad, Mesa Tsurho, Elizabeth Yuniwo**

We cleaned survey data and visualized how religiosity level affected the support informal caregivers preferred. With generalized linear models, we explored factors impacting informal caregiver stress, including income, religiosity, empathy, loneliness, health, and hours of care provided.



**Faculty: F. Haan Student: Minji Hur**
*Engineering*
- Visualize proportion data from simulation of tornado effects

**Faculty: D. Vander Griend; Student: Orin Daspit**
*Chemistry*
- Error propagation in estimating volume of ions in solution

**Faculty: E. Grantham & K. Kunnen**
*Nursing*
- Research planning to monitor nursing student resiliency

### And There Was Even More...