The UNIVERSITY *of* NORTH CAROLINA
at CHAPEL HILL

STOR 155 Introductory Statistics

Lecture 9: Cautions about Regression and Correlation, Causation

Review

- Least-Squares Regression Lines
- Equation and interpretation of the line
- Prediction using the line
- Correlation and Regression
- Coefficient of Determination

Regression Diagnostics

- Look at residuals (errors):
  - A residual is the difference between an observed value of the response variable and the value predicted by the regression line, i.e.,

$$\text{residual} = y - \hat{y}.$$

  - The sum of the least-squares residuals is always zero. Why?