

Case 3 of the *t*-Test: An Obvious Example

Colleagues on the second and third floors of Olin-Rice make measurements on a common set of samples:

mg Cl⁻ still in Fe₂O₃ analyte

Sample	Team Bio	Team Chem	<i>d</i>
A	0.150	0.145	+0.005
B	0.280	0.275	+0.005
C	0.100	0.095	+0.005
D	0.650	0.644	+0.006

$$\bar{d} = 0.0052_5 \quad s_d = 0.0005_0$$

$$t_{calc} = \frac{|\bar{d}|}{s_d} \sqrt{n} = \frac{0.0052_5}{0.0005_0} \sqrt{4} = 2_1$$

$$t_{table} (95\% \text{ CL}, 4 - 1 = 3 \text{ d. f.}) = 3.182$$

$t_{calc} > t_{table} \Rightarrow$ **significant difference in the two teams' results**