Outline - Summarizing Bivariate Data II

1. scatterplots
2. fitting a curve $y = f(x)$ to bivariate data
3. least squares criterion
4. least squares solution in **R**
5. the linear algebra of least squares

Homework - due Thursday, October 18

1. Read Section 2.4 of the text.
2. Do problems 2.18, 2.19, 2.20 of the text. In 2.20, the dataset referred to is at [http://www.calvin.edu/~stob/data/al2003.csv](http://www.calvin.edu/~stob/data/al2003.csv).

Useful R

```
> xyplot(loss~Fe,data=corrosion)  # lattice graphics
> l=lm(loss~Fe,data=corrosion)
> rplot = function (x,y) { panel.xyplot(x,y) ; panel.abline(lm(y~x))}
> xyplot(loss~Fe,data=corrosion,panel=rplot)
> track=read.csv('http://www.calvin.edu/~stob/data/mentrack.csv')
> plot(loss~Fe,data=corrosion)    # core graphics
> abline(l)
> X=cbind(1,corrosion$Fe)
> y=corrosion$loss
> solve(t(X)%*%X,t(X)%*%y)
```

Temporary Course Website

[http://www.calvin.edu/~stob/M232/](http://www.calvin.edu/~stob/M232/)