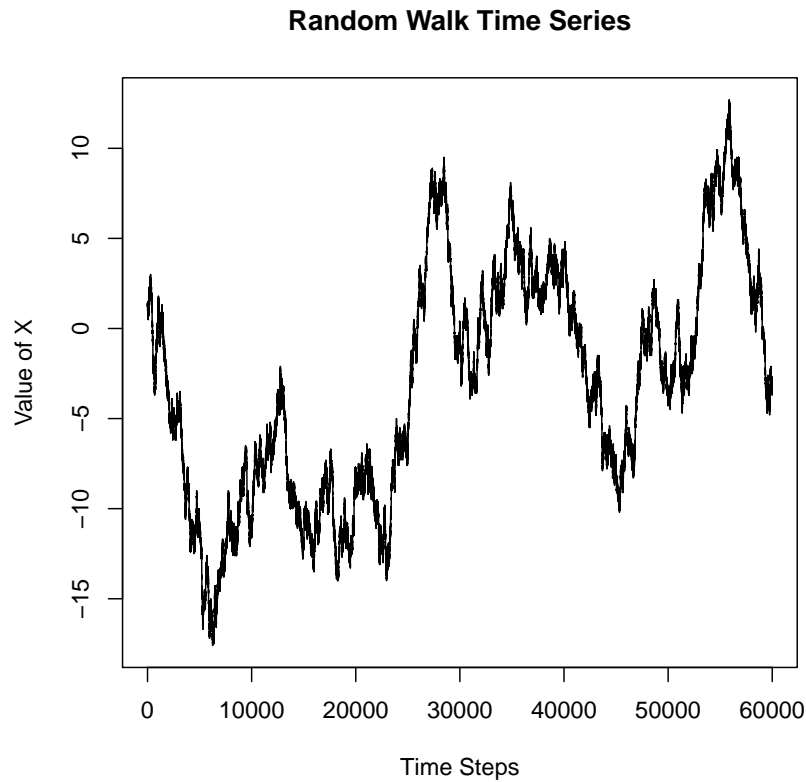# A Brief Sweave Example

Edward Russell

Here's some left-aligned R code "inserted" into a LATEX document and the plot that can be generated silently using the data generated from the simple custom function:

```
> randoW<- function(Ti,X,A){
+   # create vectors to fill and assign ser[1]
+   ser<<-vector(length = Ti, mode = "numeric")
+   ser[1]<<-X
+   err<-vector(length = Ti, mode = "numeric")
+   # generate errors and super-assign outputs to ser
+   for(i in 1:Ti) {
+    ifelse(rbinom(1,1,0.5) == 1, err[i]<- 1,
+           err[i]<- -1)
+    ser[i+1]<<- ser[i]+A*err[i]
+   }
+   Ti<<-Ti
+ }
> # call function with stated variable values
> randoW(Ti=60000,X=1,A=0.1)
```
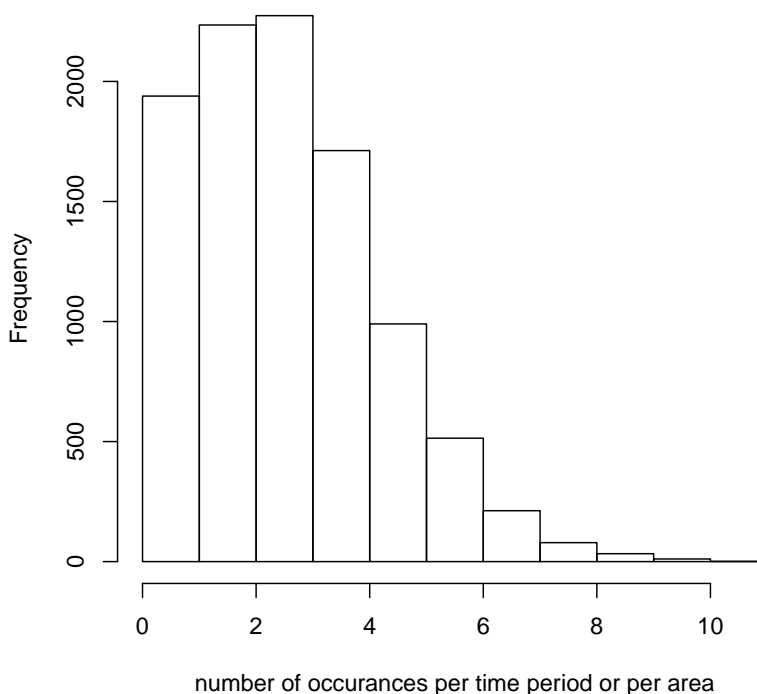
Random Walk Time Series

Now, let's look at what a simple ordered list looks like. Oh, how I love an ordered list! Also, it was formatted to have Roman numerals and was centered by adding \usepackage{enumerate} to the document preamble and then creating a {minipage}{0.4\textwidth} block inside a center block with the list items inside the {enumerate}[I.] block.

       I. The first item on the list..

     II. the second item on the list..

    III. the third item on the list..

    IV. the fourth and final item on the list.

For fun, let us now examine a plot of a random Poisson process with $\lambda = 3$. See below.

Example Histogram of Poisson Distribution

abc - section heading

There is some text under this section heading. Note that we have indented the first paragraph. This was accomplished by adding \usepackage{indentfirst} to the document preamble.

And some more text in a second paragraph.

arbitrary subsection heading

Then there is more text! A small note - I included an asterisk in the subsection label which allows for unnumbered subsections. The next bit of text will be in the form of a quote, which is a specific type of format in a *Sweave* LaTeX document.

All models are wrong, some are useful. -George Box

```
    Why does the typewriter default to beginning with an indent?  It doesn't;
we skipped a line before this code..  and we will wrap up the text portion with
blah blah blah blah. And we will wrap up the text portion with regular old text, no
```
special formatting specified. Note the carridge return that follows.
After such a carridge return there is no indentation.

Now, we skipped a line in our Sweave `.Rnw` file... and we will wrap up the text portion
with regular old text, no special formatting specified.