

Running WinBUGS

There are four main steps: 1) setting up model and data to run (“Model specification tool”); 2) identifying parameters to be followed (“Sample monitoring tool”); 3) Run model (“Update tool”). 4) Explore results (“Sample monitoring tool”). There is also a separate tool to compute the deviance information criterion (“DIC tool” [Sic]).

NOTE: Manual and Examples from “Help” menu are very “helpful”. Please explore at leisure.

A. Setting up model.

1. Start WinBUGS
2. Close “Licence Agreement” [Not applicable with “Open BUGS”]
3. Go to “File”
 - open three files:
 1. Code
 2. Data
 3. Inits [if appropriate – usually].
4. Go to “Model”
 - Click on “Specification” tab. You will see “Specification tool” open.
5. Click on blue bar on “Code” file to highlight window.
6. On specification tool – click on “Check model”. You should see “model is syntactically correct” in bottom left hand corner.
7. Highlight the “data” window.
8. On the specification tool – click on “Load Data”. You should see “Data loaded” in bottom left.
9. Click “Compile”. See “Model compiled” at bottom left.
10. Highlight “inits” window.
11. On specification tool click “Load inits”

At this point WinBUGS is primed

B. Set up parameters to be tracked.

1. Click on “Inference” – you will see drop down menu.
2. Select “Samples” - you will see the “Sample monitor tool” open.
3. In the “node” space (node is same as parameter) type in the name of a parameter (e.g. “mu”). You will see “set” highlighted. Click “set”.
4. Repeat “3” for other parameters you wish to monitor.
5. When this step complete type “*” in node space (this is shorthand for “all parameters”). You will see a number of buttons highlighted.
6. Click on “trace”. You will see a window open with a series of vacant graphs, one for each parameter you are monitoring. [Open BUGS – window comes up when click after some cycles]

WinBUGS is now ready to run.

C. Run model.

1. Go back to “Model” button on tool bar.
2. From dropdown menu, select “Update”. The “Update tool” will appear.
3. You will see “updates” set at 1000 and “refresh” set at 100. These numbers can be changed if desired.
4. Click “Update”. You should see squiggles go past very fast as WinBUGS runs the first 1000 iterations. After the first 1000 iterations, you can change the number of iterations (?20,000) and then “Update” again. You will see more squiggles.

When you are satisfied you have run enough cycles, go to D.

D. Explore results.

1. On the “Sample monitor tool” you will see a number of buttons. You can experiment to see what happens when you click on some of them. Especially helpful are “History”, “Density”, “Stats” and “Autocorr”.