

IRE – Introduce Random Error

Often when working in the epidemiological and public health realm, we want to use human case data (on positive cases of West Nile virus, for instance) but need to maintain confidentiality of human records. IRE (Introduce Random Error) is a small macro written for Microsoft Excel, that introduces an accepted range of error values to latitude and longitude coordinates, such that records can still be useful while maintaining health department privacy policies.

To use the generator, simply place your latitude and longitude into the first two columns under “Observed Data” and you’ll see the columns automatically fill in under the “Data with Error Introduced” columns. That’s it! Remember, these new columns are volatile, meaning ever time you make a change on this spreadsheet, new values will be calculated.

The default is to calculate an error rate within 0.5 kilometers. This is enough error for our public health records, but feel free to adjust this value in the macro formula, simply by changing the (0.005) to whatever value you need (In decimal degrees, .01 is roughly equal to 1 kilometer).

Generally, this macro can be used to introduce any amount of error within a range to any given value, so use your imaginations.

Feel free to contact the author at iluvsa@ucla.edu with any questions/improvements. Copyright © 2009, Ryan J. Harrigan, University of California, Los Angeles.