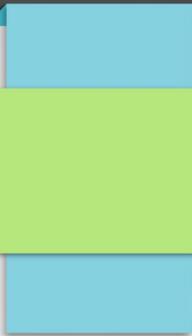


Peer Review

Basic understanding

Design of Experiments

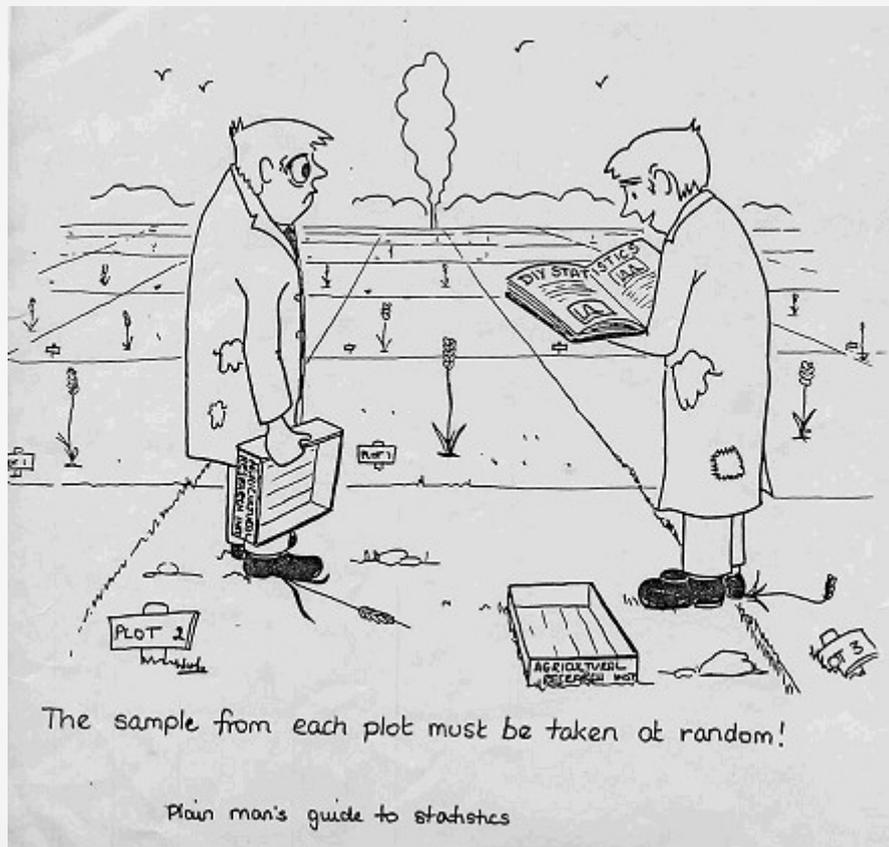
- In statistics, these terms are usually used for *controlled experiments*. Formal planned experimentation is often used in evaluating physical objects, chemical formulations, structures, components, and materials.

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- In the design of experiments, the experimenter is often interested in the effect of some process or intervention (the "treatment") on some objects (the "experimental units"), which may be people, parts of people, groups of people, plants, animals, etc. Design of experiments is thus a discipline that has very broad application across all the natural and social sciences and engineering.

Principles of experimental design, following Sir Ronald A. Fisher

- Comparison
- Randomization
- Replication
- Blocking

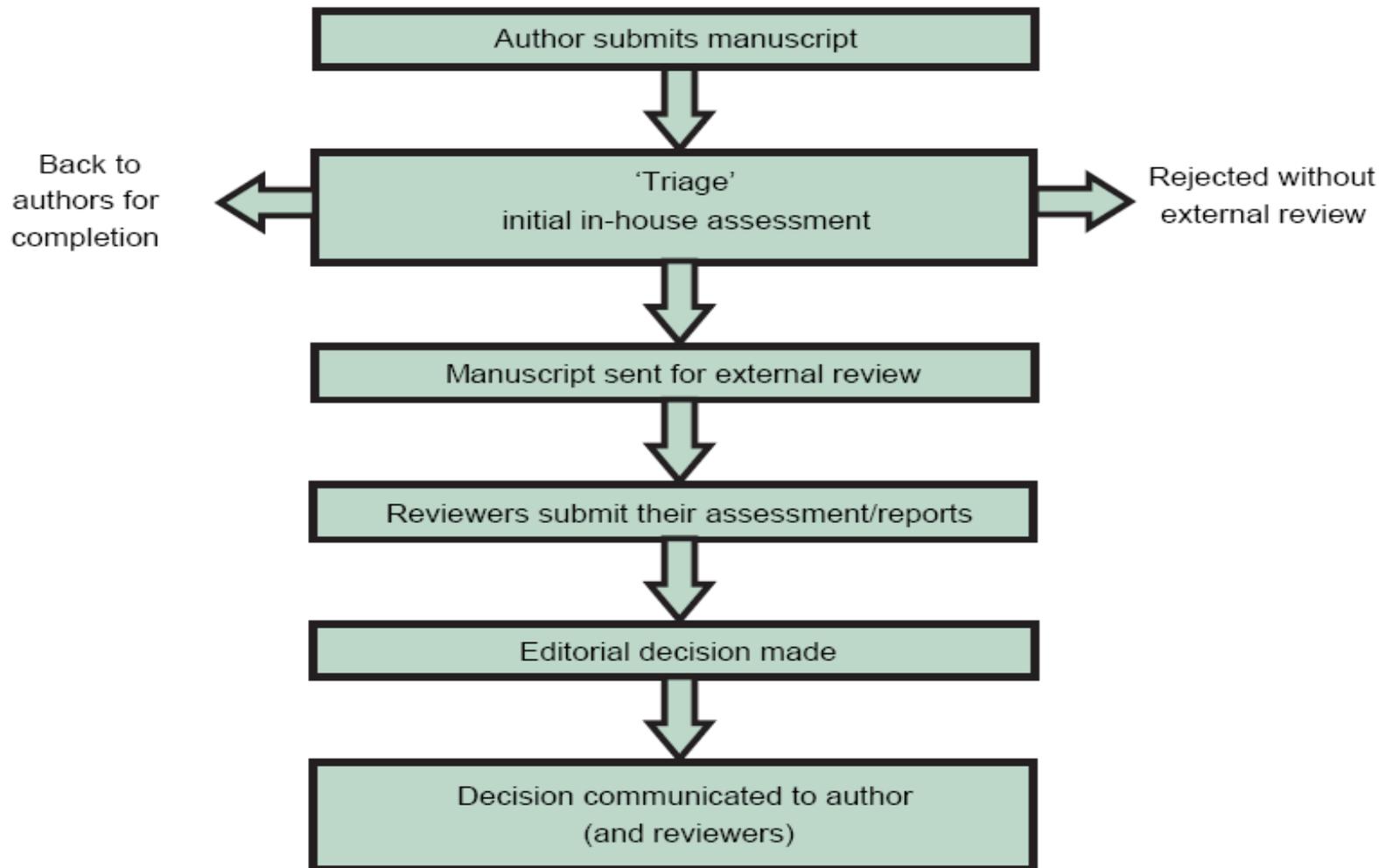
Randomization



Peer Review

- Peer review -is the evaluation of work by one or more people of *similar competence to the producers of the work* (peers). It constitutes a form of self-regulation by *qualified* members of a profession within the relevant field. Peer review methods are employed to maintain standards of quality, improve performance, and provide credibility. In academia peer review is often used to determine an academic paper's suitability for publication.

Peer Review



Meta-analysis

- Meta-analysis - refers to statistical methods for contrasting and combining results from different studies, in the hope of identifying patterns among study results, sources of disagreement among those results, or other interesting relationships that may come to light in the context of multiple studies.

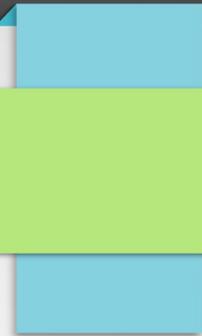
Meta-analysis

- The motivation of a meta-analysis is to aggregate information in order to achieve a *higher statistical power* for the measure of interest, as opposed to a *less precise measure derived from a single study*.

PLOS ONE

- PLOS ONE (originally PLoS ONE) is an open access peer-reviewed scientific journal published by the Public Library of Science (PLOS) since 2006. It covers primary research from any discipline within science and medicine. All submissions go through an internal and external pre-publication *peer review*, but are not excluded on the basis of *lack of perceived importance* or adherence to a scientific field.

- Scientific Journal
- Food and Chemical Toxicology is a *peer-reviewed* scientific journal which covers aspects of food safety, chemical safety and other aspects of consumer product safety. It is published by Elsevier and was established in 1963. The editor-in-chief is A. Wallace Hayes (Harvard School of Public Health).

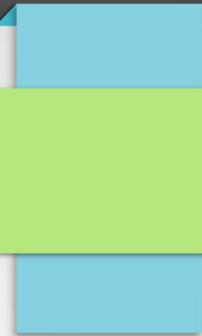
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- Assessment of the health impact of GM plant diets in long-term and multigenerational *animal feeding trials*: A literature review
 - Conclusion

Systematic Review

Effects of GM diets in all long-term and multigenerational studies were analyzed. ► *No sign of toxicity* in analyzed parameters has been found in long-term studies. ► *No sign of toxicity* in parameters has been found in multigenerational studies. ► The 90-day OECD Guideline seems adequate for evaluating health effects of GM diets.

A Meta-Analysis of Effects of Bt Crops on Honey Bees (Hymenoptera: Apidae)

- PLOS
- Honey bees (*Apis mellifera* L.) *are the most important pollinators* of many agricultural crops worldwide and are a key test species used in the tiered safety assessment of genetically engineered insect-resistant crops. There is *concern* that widespread planting of these transgenic crops could harm honey bee populations.

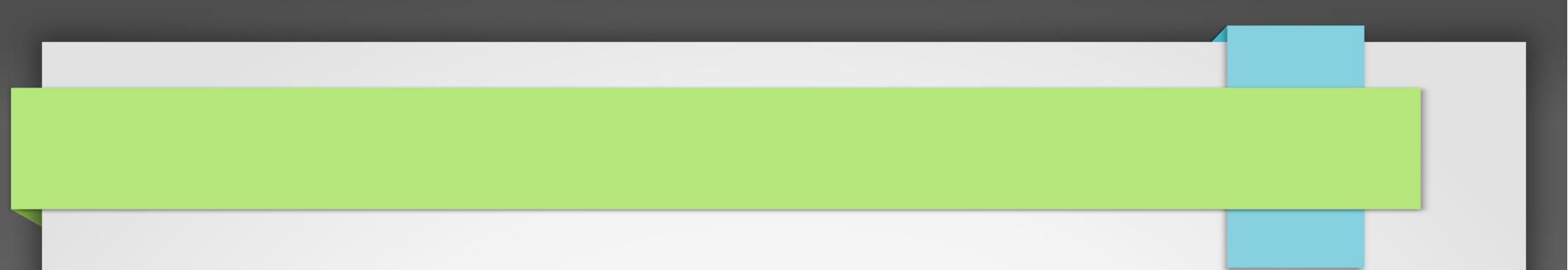
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- Conclusion
 - Although the additional stresses that honey bees face in the field could, in principle, modify their susceptibility to Cry proteins or lead to indirect effects, our findings support *safety assessments* that have not detected any direct negative effects of Bt crops for this vital insect pollinator.

Golden Rice

- Golden rice is a variety of *Oryza sativa* rice produced through genetic engineering to biosynthesize beta-carotene, a precursor of *vitamin A*, in the edible parts of rice.[1] The research was conducted with the goal of producing a *fortified food* to be grown and consumed in areas with a *shortage of dietary vitamin A*,[2] a deficiency which is estimated to *kill* 670,000 children under the age of 5 each year.[3]

•Potential risks

- No risk to human health is anticipated from the field trials. The beta carotene in Golden rice is the same as the beta carotene that is found and consumed in many nutritious foods and supplements. The genes that have been inserted into Golden Rice are not related to any known allergens or toxins.

- 
- Rice is essentially self-pollinating, so the chance of cross-pollination between Golden Rice and other varieties is very small. Other measures are also in place to assure that there is no cross-pollination from Golden Rice and other varieties during this test.

- Golden Rice varieties will be developed with the same high yield, pest resistance and grain and eating qualities as non-Golden Rice varieties. *Golden Rice can be planted, harvested, threshed, stored, and milled like any other rice.*

List of Meta-Analysis

- <http://www.biofortified.org/2014/02/industry-funded-gmo-studies/>

Any evidence Peer Review on any topic that any of you have and think it's important to me to know it, feel free to send at jose.neville@upr.edu