

Kolloquium „Statistische Methoden in der empirischen Forschung“

Wann: 16. Oktober 2012, 17:00 – 18:30 Uhr

Wo: Landwirtschaftlich-Gärtnerische Fakultät der HU, Hörsaal 2, 2. Etage,
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Was sagt uns eigentlich ein p-Wert?

Über Fehlinterpretationen von p-Werten und Fehlerraten

Misunderstanding of significance tests and P values is widespread in clinical research and elsewhere. In this talk I will review the problems arising from mixing and confusing three incompatible inferential paradigms: Fisher, Neyman-Pearson and Bayes.

I will then assess the implications of two common mistakes in the interpretation of statistical significance tests.

The first one is the misinterpretation of the type I error rate as the expected proportion of false positive results among all those called significant, also known as the false positive report probability.

The second is the misinterpretation of a P value as the (posterior) probability of the null hypothesis. A reverse-Bayes approach is used to show that these two misinterpretations imply strong and often unrealistic assumptions on the prior probability of a truly effective treatment.