

Global change and the questions for which we have no answer (yet).

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Thousands of experiments have been done to analyse how plants respond to their abiotic environment, and how this will affect our food security and natural ecosystems in the future. However, we as a community are currently not able to provide quantitative answers to even some of the basic questions about plant responses to global change. In this talk I will discuss a method to derive quantitative dose response curves (DRCs) from a wide range of independent experiments where a given environmental factor was manipulated. By deriving these DRCs we will be able to much better integrate a multitude of data into ecophysiological knowledge. This allows not only to better forecast what happens to plants in the future, but will also show where the major knowledge gaps are. It also allows for a more efficient teaching of new generations of researchers. In this talk I will present a range of dose-response curves to light, CO₂, temperature and water and use them as a starting point to discuss several questions related to global change which have not received sufficient attention so far, including the supra-cellular side of systems biology and the transfer of knowledge from lab to field.

For more information see www.metaphenomics.org.