

# Philosophical ponder over the patterns!

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This microscopic image of my rice leaf surface exhibiting stomata and other cells arranged in patterns leaves me baffled how much non randomness exists in the universe. Given the life on earth occurred randomly, how minuscule the probability would be. One of my research objectives is to test different imaging techniques to capture stomatal patterning in rice (C3 crop) and setaria (C4) grasses and to understand the role of stomatal patterning related to drought tolerance. The exchange of water and CO<sub>2</sub> between a leaf and the atmosphere is regulated by the aperture and pattern of stomata. Mechanistic modeling indicates that stomatal conductance could be reduced to improve water use efficiency in crops. Thus, in this research we are testing how different genotypes with higher and lower stomatal density perform under drought prone condition. This image was captured using leaf imprint method and imaged under a bright-field microscope at 20x magnification.

