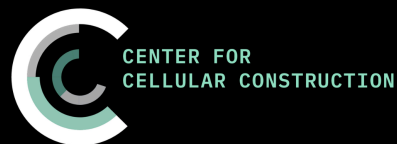
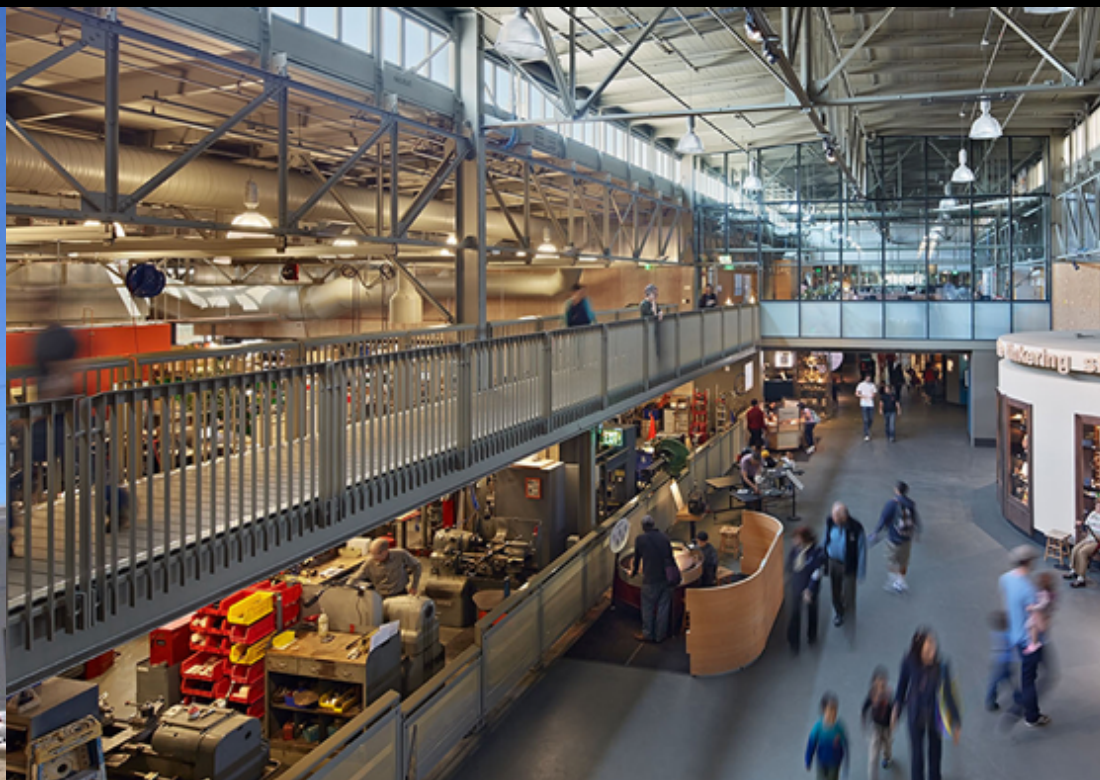


EXHIBIT DEVELOPMENT | A CREATIVE PROCESS

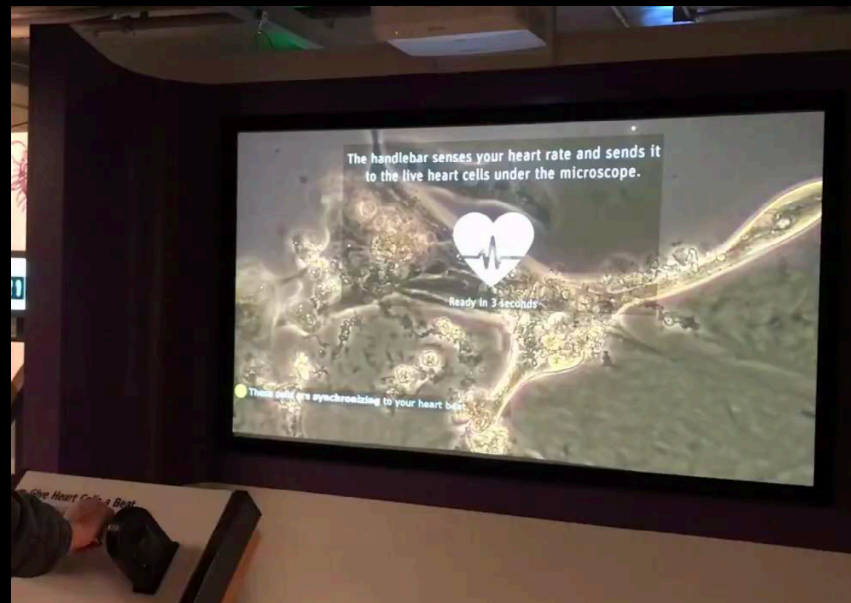
CCC QUARTERLY MEETING 11.14.2022

Kristina Yu with Denise King





THE EXPLORATORIUM



EXHIBITS

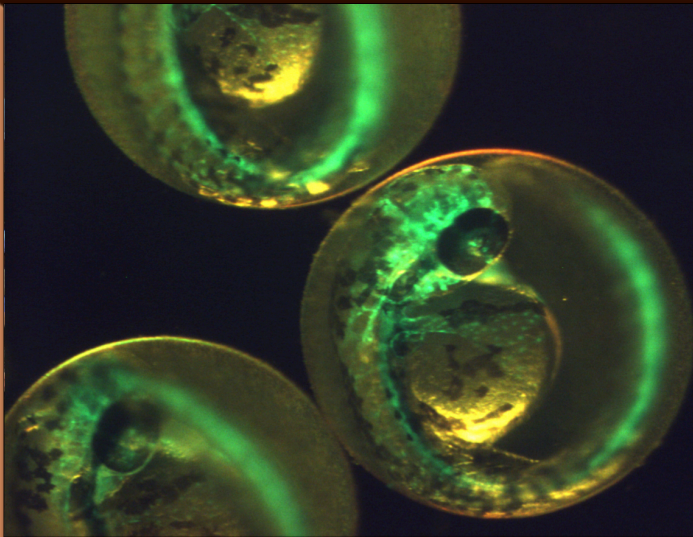


QUESTIONS



CONTENT FOCUS

FRAMING

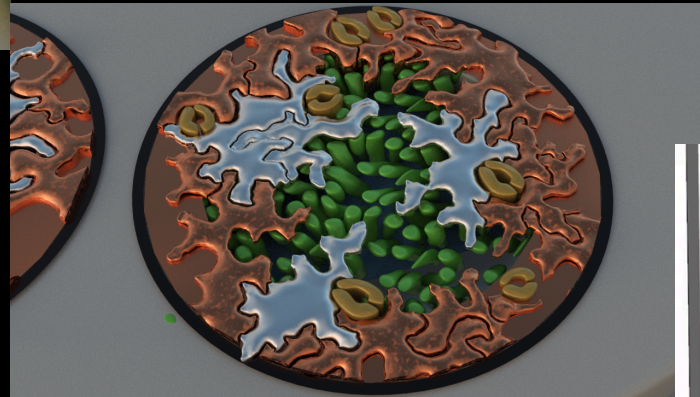
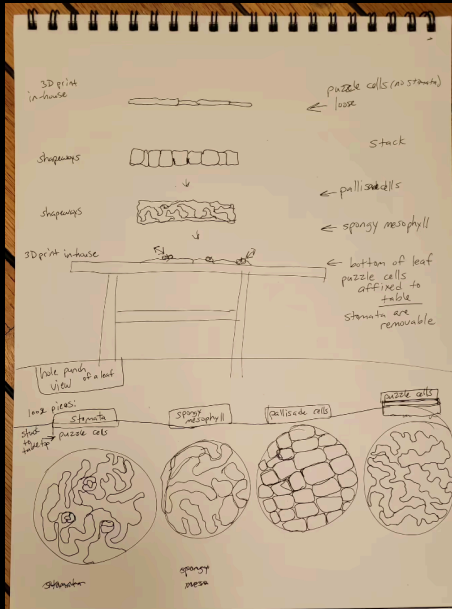
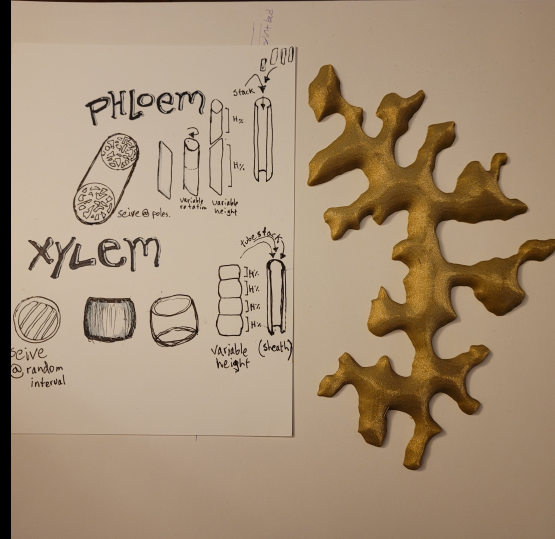


PHENOMENA

PEDAGOGY



FRAMING



PLANT LEAF PUZZLE & BRONZES

DENISE KING

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Review

The Leaf Adaxial-Abaxial Boundary and Lamina Growth

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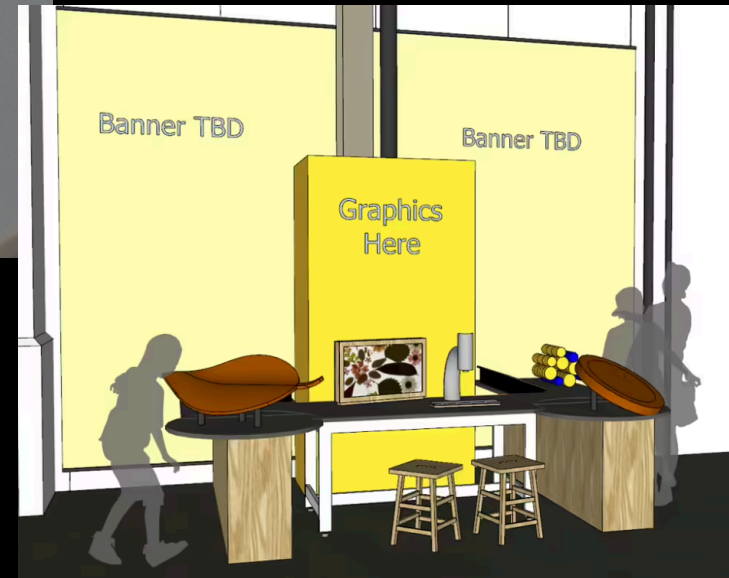
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Abstract: In multicellular organisms, boundaries have a role in preventing the intermingling of two different cell populations and in organizing the morphogenesis of organs and the entire organism. Plant leaves have two different cell populations, the adaxial (or upper) and abaxial (or lower) cell populations, and the boundary is considered to be important for lamina growth. At the boundary between the adaxial and abaxial epidermis, corresponding to the margin, margin-specific structures are developed and structurally separate the adaxial and abaxial epidermis from each other. The adaxial and abaxial cells are determined by the adaxial and abaxial regulatory genes (including transcription factors and small RNAs), respectively. Among many lamina growth regulators identified by recent genetic analyses, it has been revealed that the phytohormone, auxin, and the WOX family transcription factors act at the adaxial-abaxial boundary downstream of the adaxial-abaxial pattern. Furthermore, mutant analyses of the WOX genes shed light on the role of the adaxial-abaxial boundary in preventing the mixing of the adaxial and abaxial features during lamina growth. In this review, we highlight the recent studies on the dual role of the adaxial-abaxial boundary.

Keywords: leaf development; the adaxial-abaxial boundary; lamina growth; leaf margin; auxin; the WOX family transcription factor

1. Introduction

The “boundaries” between two different cell populations play a role as the center of many developmental events. In animal development (e.g., embryonic segmentation, vertebrate somite



THANK YOU!