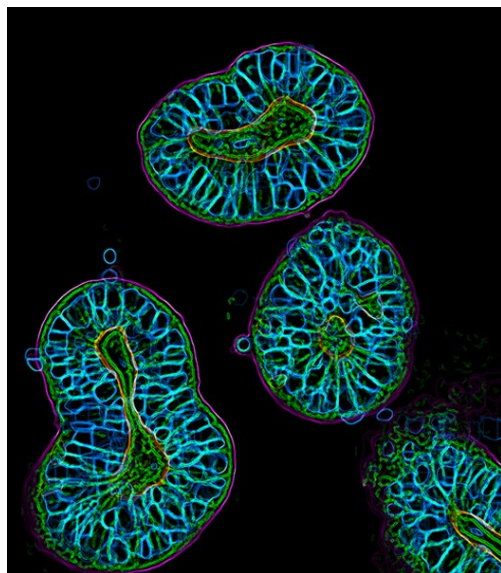


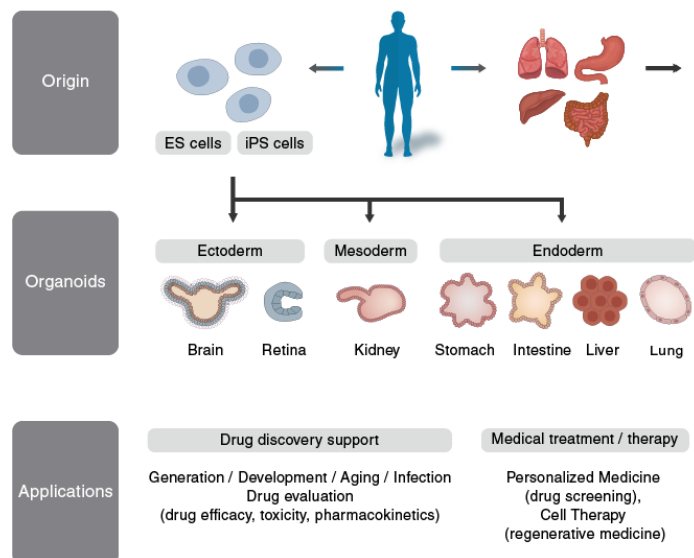
# BN4302: ORGANOID BIOENGINEERING

## WHAT IS THIS MODULE ABOUT?

Cell and tissue bioengineering plays a crucial role in drug development, cancer treatment, and more. Although the mechanical microenvironment of cells is important for many biological processes, existing culture methods are unable to replicate the complex biophysical environment of the body. To address this, the use of organoids, or organ-specific multicellular tissue constructs grown in a supportive extracellular matrix, has grown at a rapid pace. This module will explore the role of bioengineering in the discovery, development, and functional exploitation of organoids for broad applications like drug discovery, immunotherapy, and stem cell biology. We'll cover a number of interdisciplinary facets of organoid bioengineering, including constituents of organoids, materials for organoids, applications for organoids, and emerging engineering challenges for organoids.



Crown Bioscience



MBLLife Science

## WHY YOU SHOULD CONSIDER THIS MODULE

Have you been learning about cell culture and been shocked at how old fashioned a lot of it seems? Putting cells on stiff glass substrates that are two dimensional... come on, that's so 1975! Do you think that the best way to learn about cellular bioengineering is to put cells in an environment like the ones they live in in the body? If so, then ORGANOID ENGINEERING is where you want to be! Come learn about the newest cutting edge strategies to engineer cells and their 3D matrix for a number of super-hot academic and industrial applications, like drug discovery, tissue engineering, and personalized medicine. It's 2022- start growing your cells like it!



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