

# Child Health and Human Development Program



## MONDAY NOON SEMINARS

### Hans Clevers, PhD

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**January 17, 2022, 12-1 PM**

## Organoids to Model Human Disease

### Seminar Highlights

- Stem cells are the foundation of all mammalian life. They come in two flavors. **Embryonic stem cells** are briefly present in the early human or mouse embryo, a few days after fertilization. These stem cells can be grown indefinitely in the lab and have the potential to build each and every tissue in our body. ES cells hold great promise in the field of regenerative medicine.
- **Adult stem cells.** Every organ in our body harbors its own dedicated stem cells. These adult stem cells replace tissue that is lost due to wear and tear, trauma and disease. Adult stem cells can only produce the tissue in which they reside. The adult stem cells allow us to live 80-90 years, but this comes at a cost: they easily turn into cancer.
- Both types of stem cells can be used to establish 'organoids', 3D structures established in a dish, that recapitulate many aspects of the original organ -including its diseases.

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