



Growing, Growing, Grown

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Spare parts

* Problem

- It is often difficult to obtain a viable transplant.

* Solution

- Generate organs in the laboratory
- Using patient's cells lowers the likelihood of rejection
- Not reliant on chance
- Want to mimic natural organs

Don't have a cow!

* Problem

- Solutions to food shortages focus on plant crops. Why can't we find a way to produce portions of meat for consumption?

* Solution

- If we can make cells grow in a Petri dish, we should be able to make larger tissues grow.
- Meat without the farm.

Crop Modification

- * Problem: Growing better and more resilient crops.
- * Solutions:
 - Identifying salt and drought tolerance genes and pathways found in xerophytes, resurrection plants, and halophytes.
 - Producing crops with greater nutritional content (golden rice).
 - Addressing environmental concerns of introducing new plants to a region.

More Effective Pesticides

- * Crops can be engineered to defend themselves against pests
- * Problem: Evolution of both plant and pest can lead to complications

Solution:

- * To counter evolutionary changes...
- * Create way to track changes in pest population, alter crop/pesticide accordingly
- * Study interaction between plant and pest, alter plant to resist
- * Harvest genes from most resistant plant and generate a new field's worth of seeds
 - Process is time-consuming, speed up process?

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