

Wake Forest Institute for Regenerative Medicine



First Organ Transplant, Boston, MA 1954

Every 30 seconds,
a patient dies from
diseases that could be treated
with tissue replacement

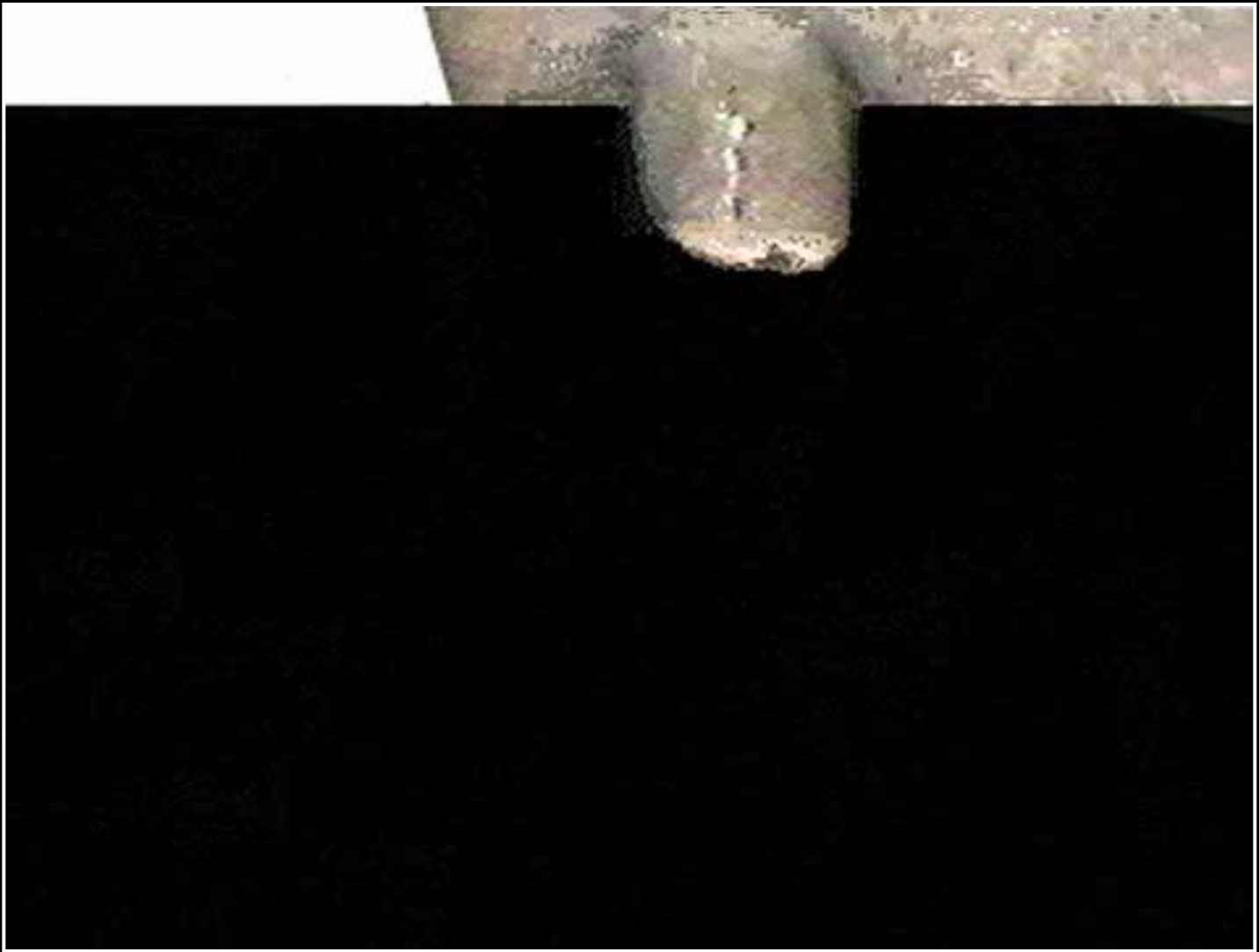
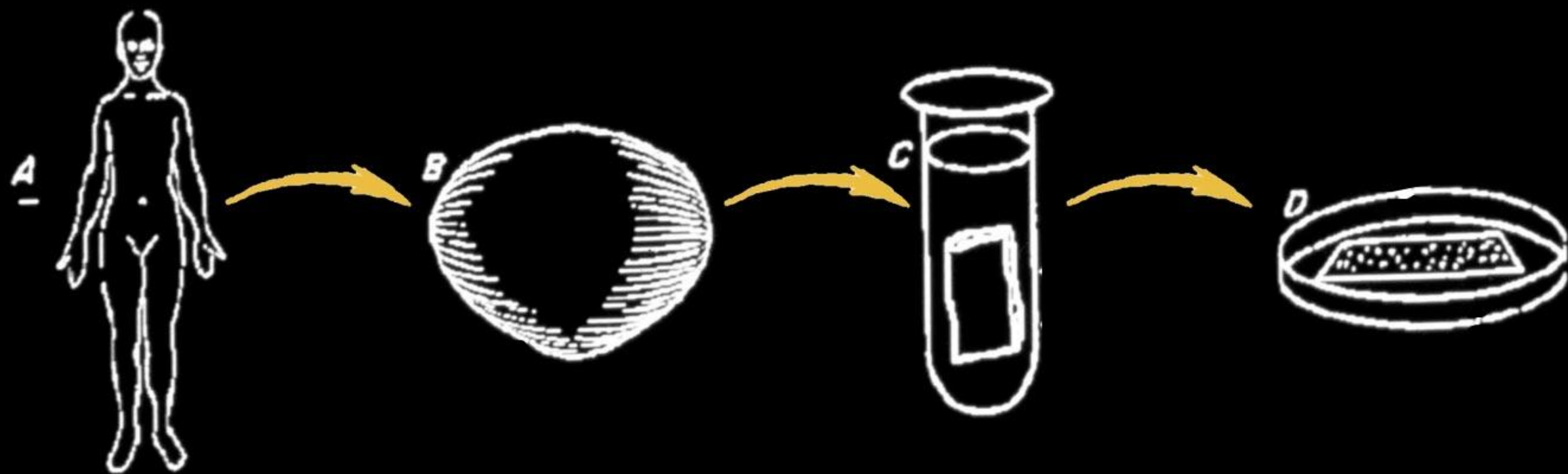
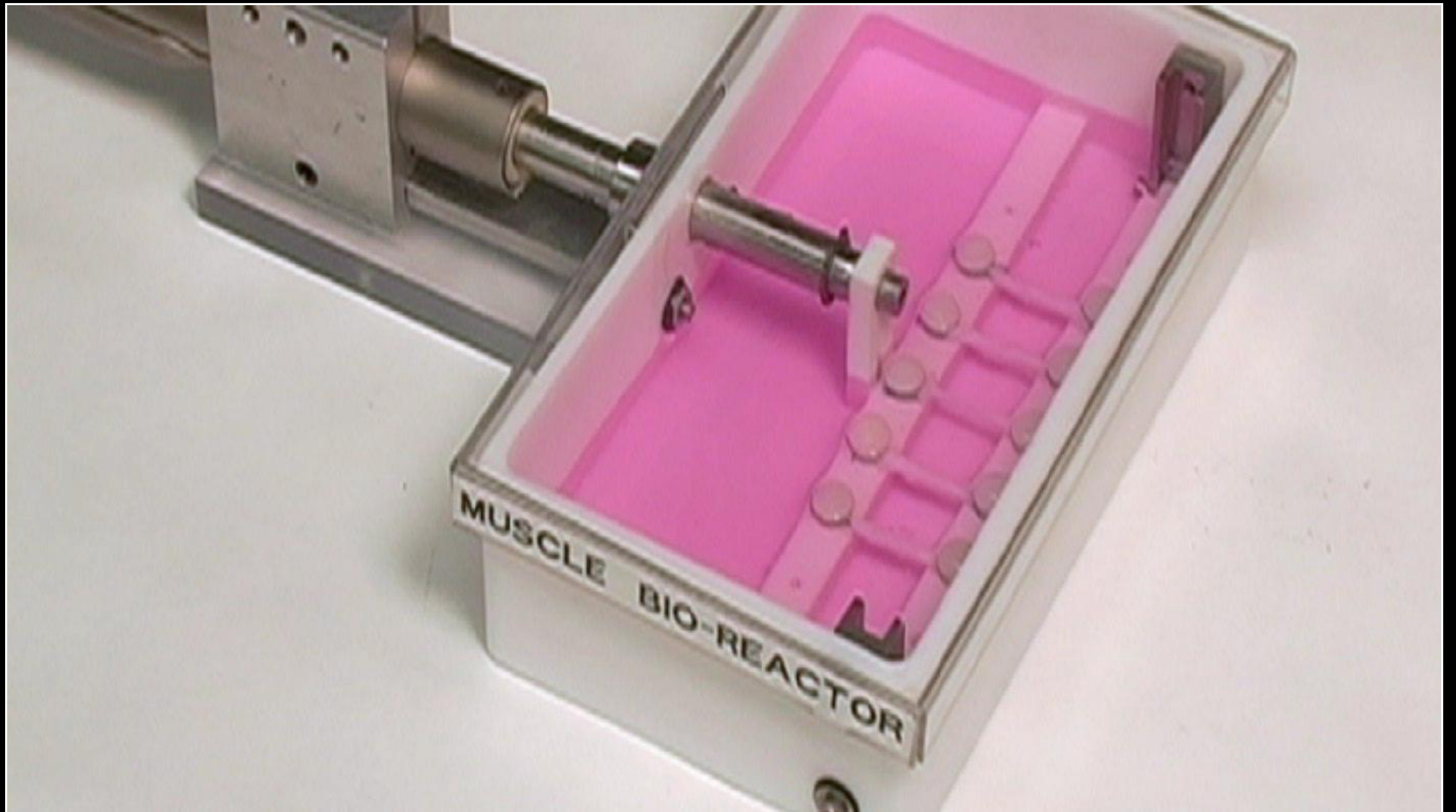


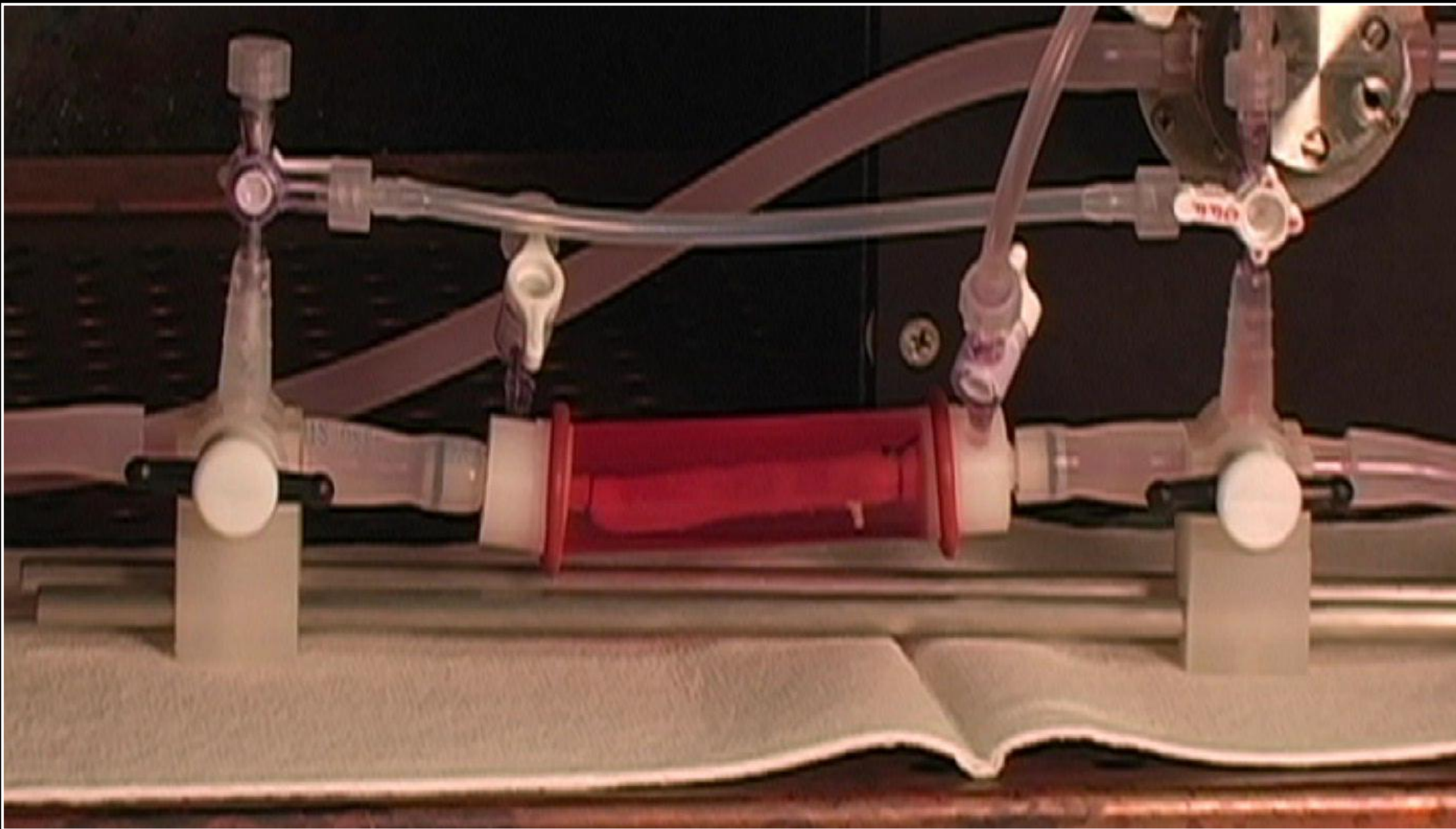
Photo credit: briangratwicke, Flickr

First use of a natural biomaterial in humans for tissue regeneration, 1996

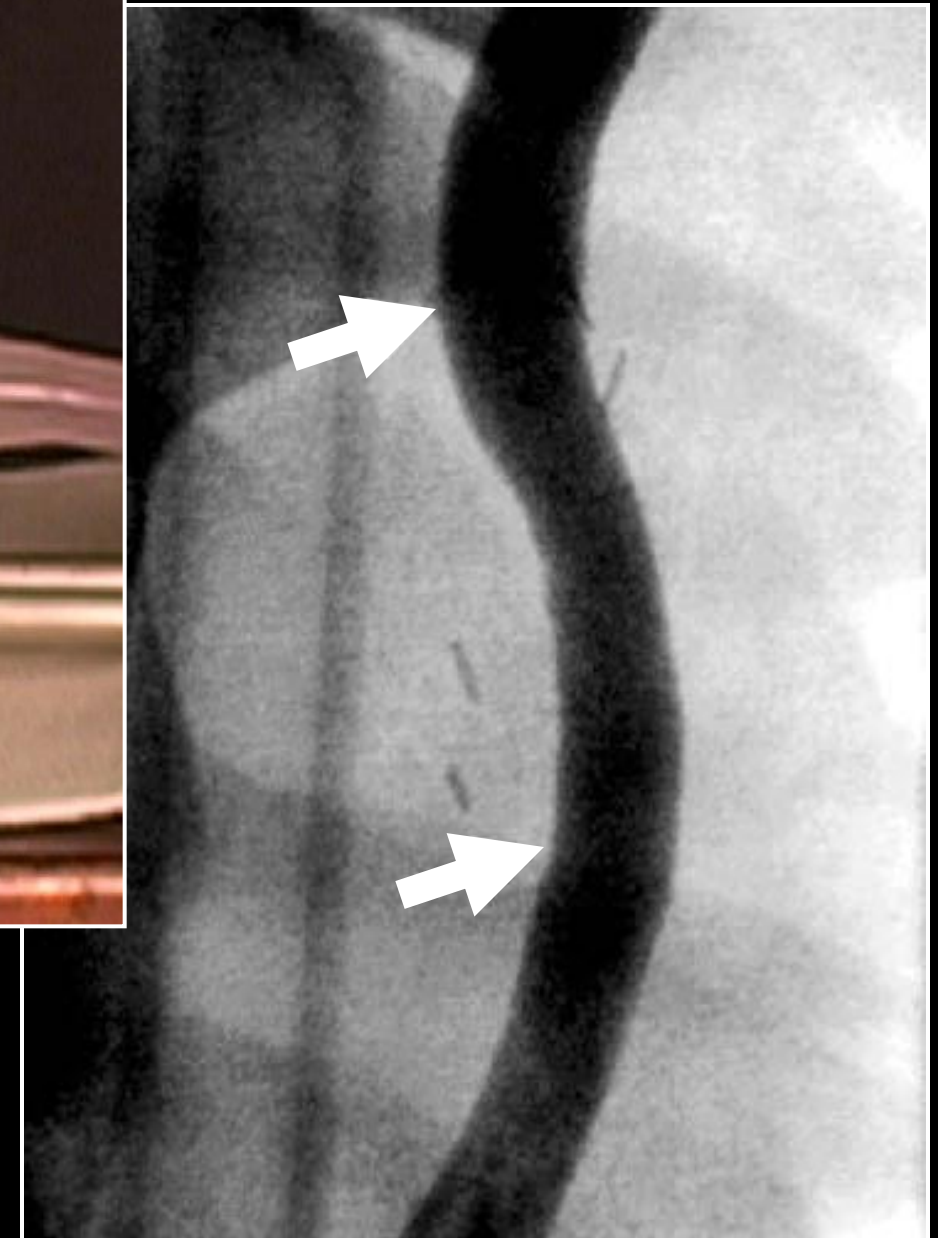




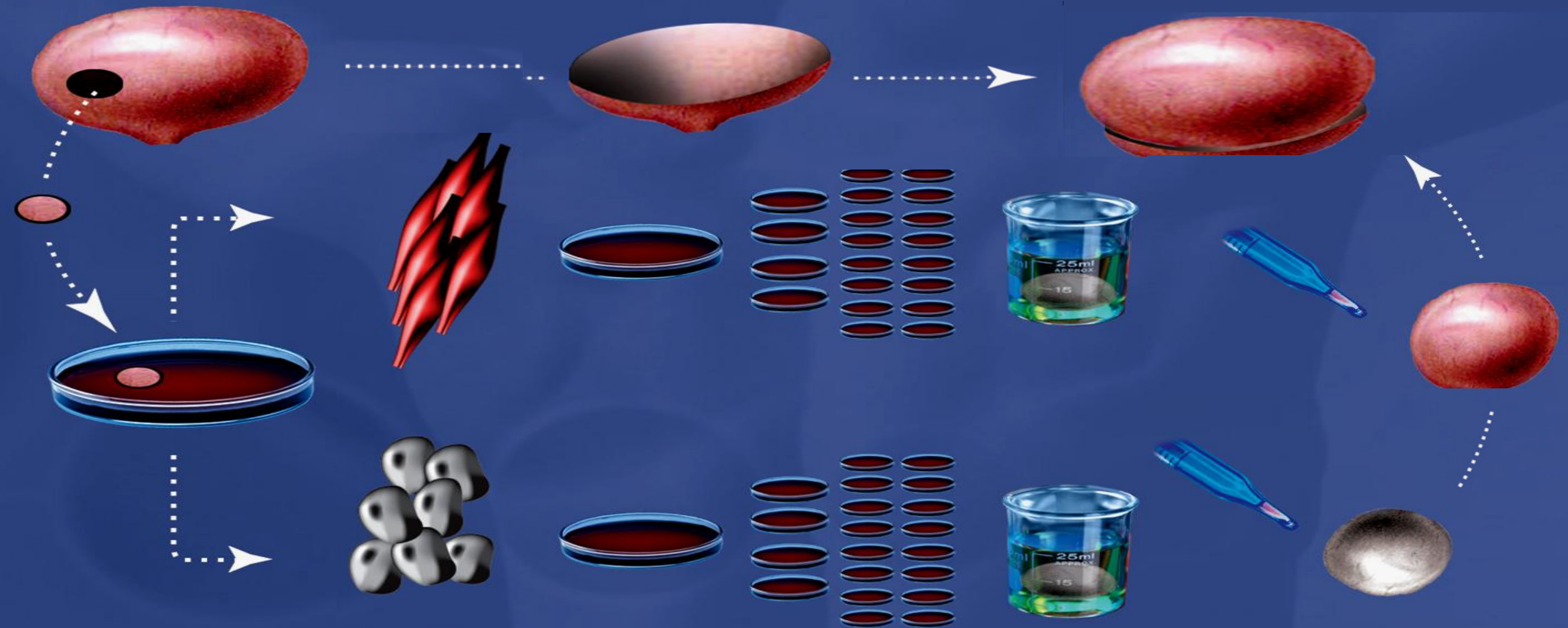




Engineered
Blood Vessel



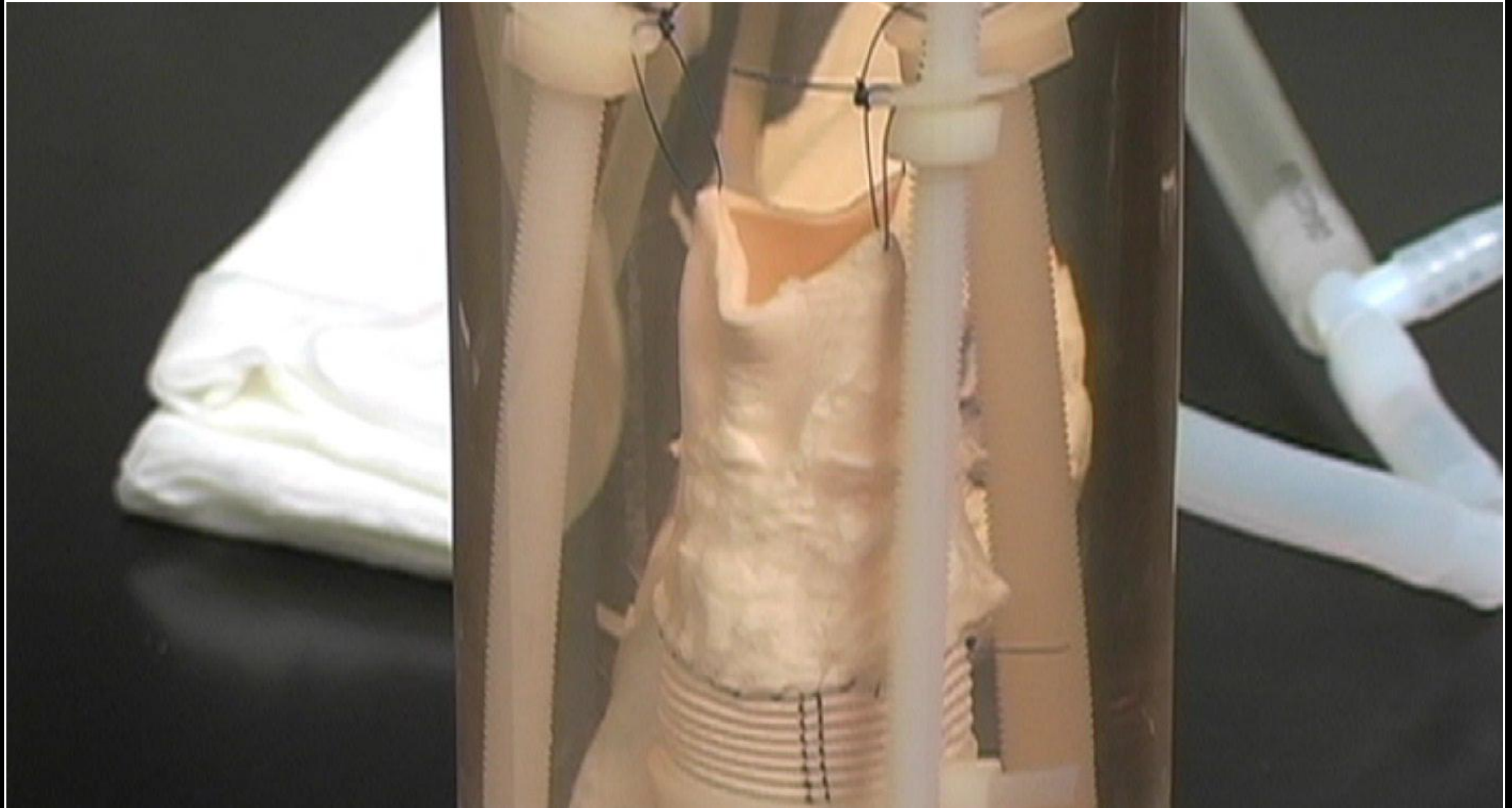
Creation of first engineered organ: **BLADDER**



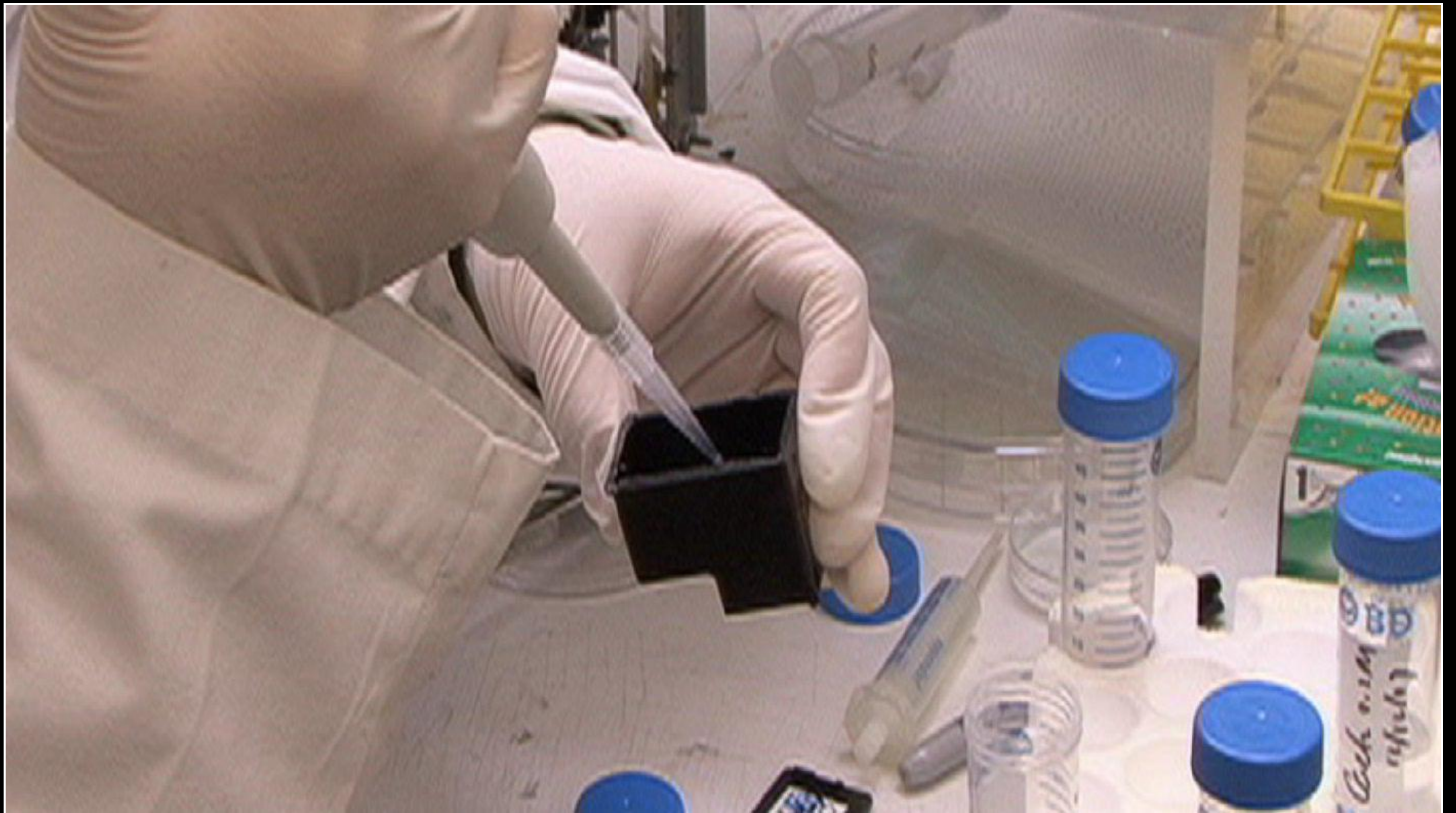
6-8 WEEKS

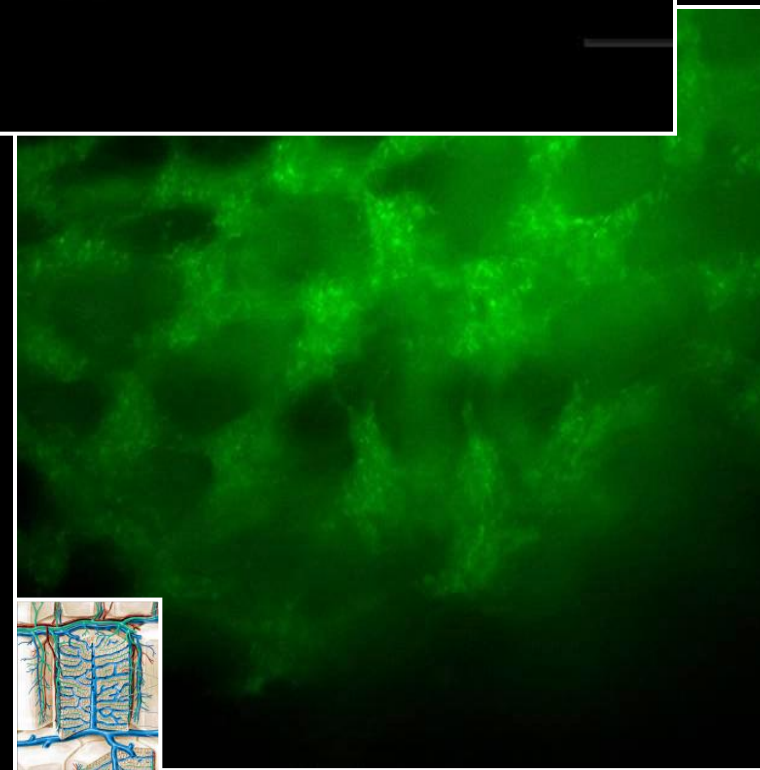
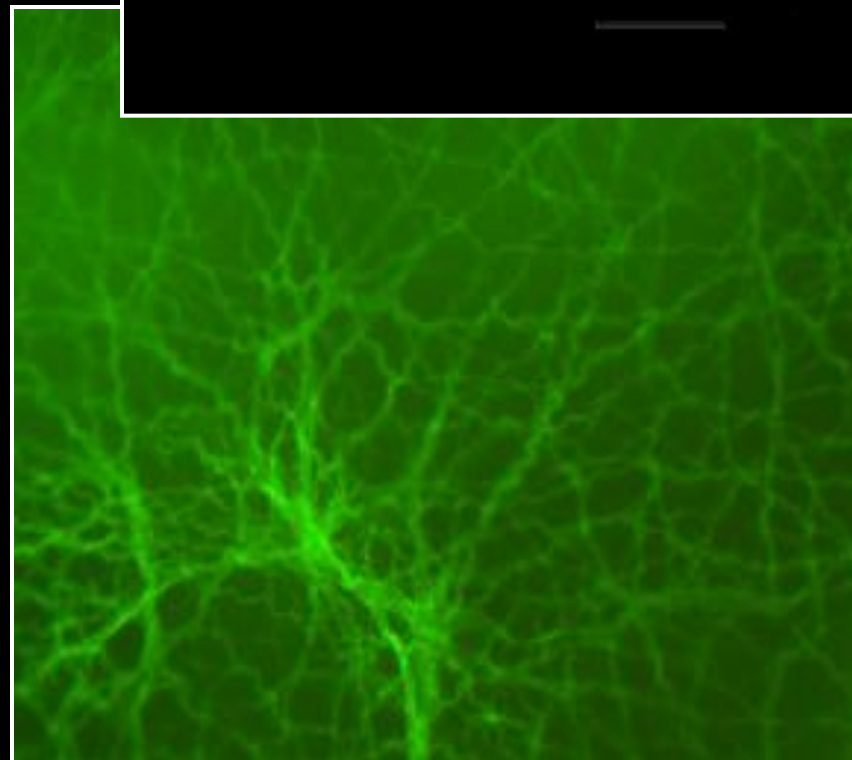


Engineered Heart Valve

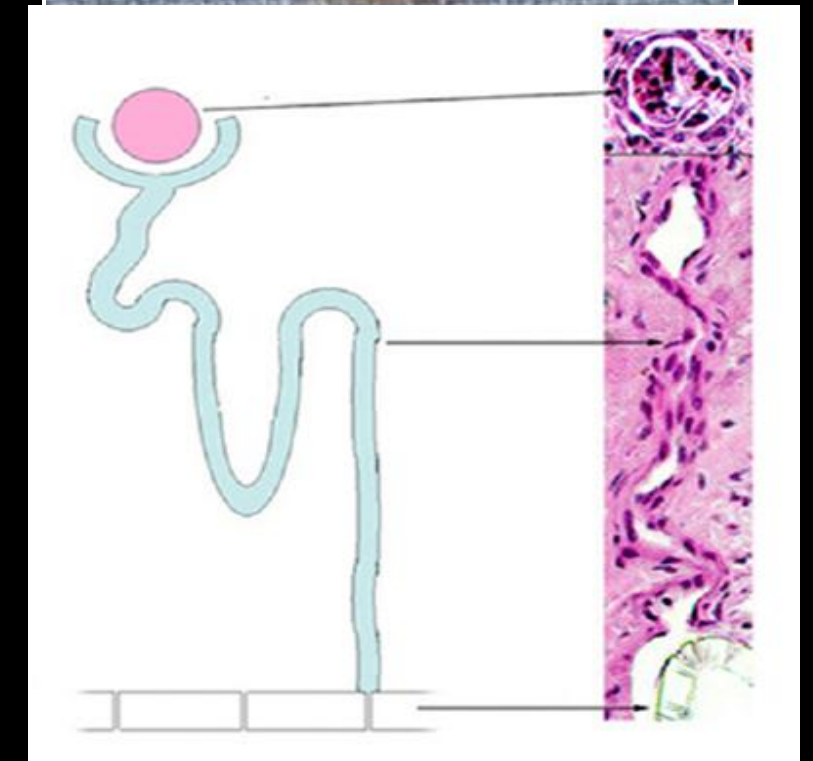








Engineered Liver

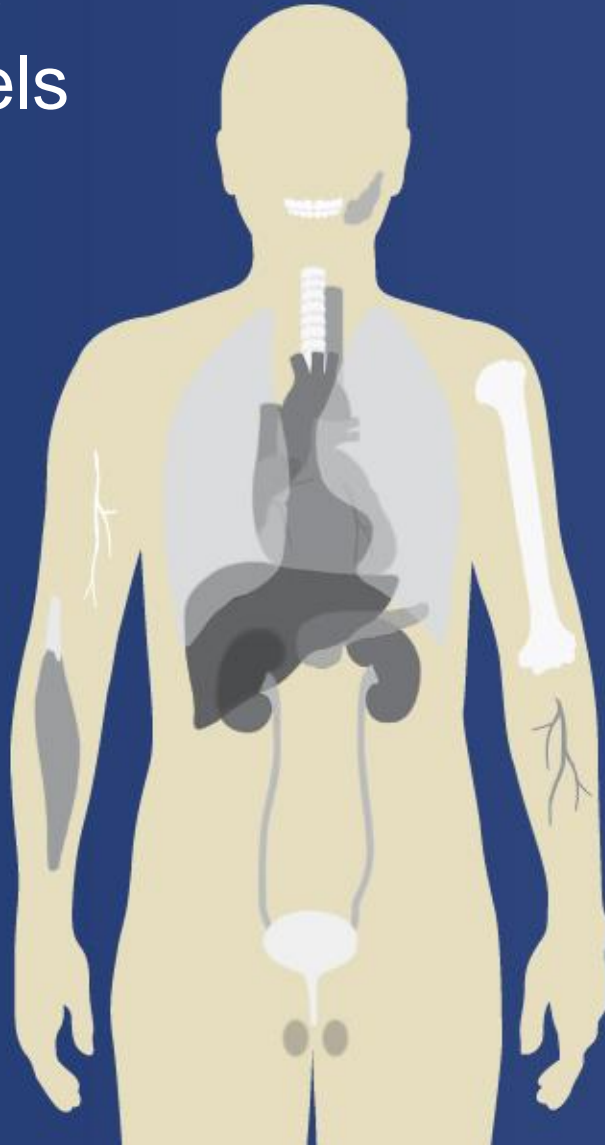


Engineered Kidney

Regenerative Medicine

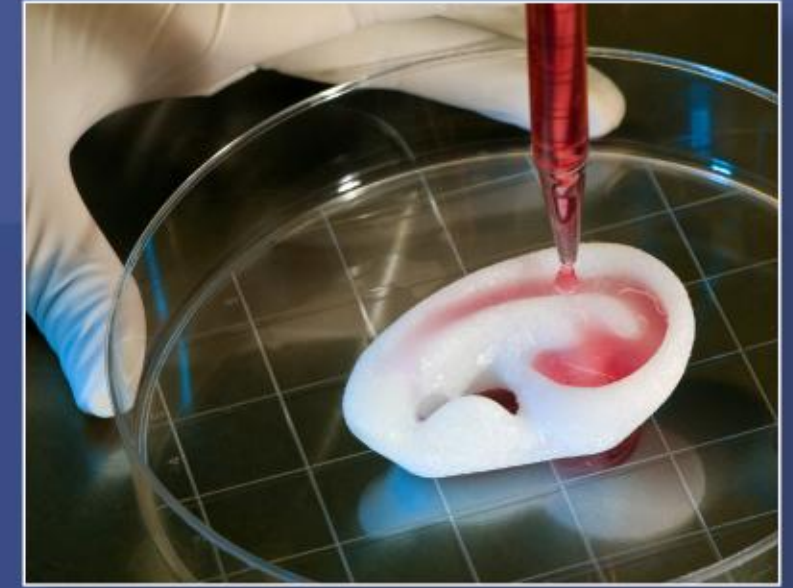
TISSUE ENGINEERING

- Heart valves
- Blood vessels
- Liver
- Muscle
- Skin
- Ears
- Digit



CELL THERAPIES

- Parkinson's Disease
- Diabetes
- Kidney Failure



Regenerative medicine is more than growing replacement organs.

Tissue Engineering

Development of replacement tissue and organs, and other body parts like skin, ears, etc.

Diagnostic Platforms

Multiple technologies ranging from genetic and pathogen detection tests to the use of engineered human tissue in pre-clinical drug testing.

Cellular Therapies

Using the body's own cells or in some cases stem cells to deliver a therapeutic result. Examples include kidney repair, heart repair, and muscle repair.

Healing Therapies

Therapies that assist the body in healing itself such as wound dressings, healing gels, burn creams, etc.

Supporting Technologies

Technologies that enable other translational therapies to be delivered such as bioreactors, cell harvesting kits, delivery techniques, etc.

Total budget for FY 2009-10 with a breakout of the source of funds:
\$27,000,000 expended in FY09/10 with \$3,300,000 expended from the State, \$2,600,000 funded by the institution, and the balance (\$21,100,000) funded by Federal, Industry, and private donations.

Total amount of funds held in cash, short-term investments, and long-term investments: **As of the start of the FY2010/11 we have \$16,900,000 in unexpended designated grant funding.**

Percent of funds (all sources) used for administrative purposes:
\$2,600,000 of \$27,000,000 was expended on Administration which is less than 10%.

Approximately 300 physicians, scientists, instructors, and staff working in regenerative medicine.

Salaries of top 5 highly compensated individuals- **Professors (4) - \$231,750, \$210,000, \$195,700. \$194,000, Director of Tech Transfer - \$225,000**

Benefits available to employees: **Usual, standard, & customary.**

Board operations: Number of Board members: **6**

Frequency of Board meetings: **Quarterly**

Expenses of Board members: **none.**

...Regenerative medicine
will be the standard of care for replacing
tissue/organ systems in the human body.“

US Department of Health and Human Services

*Because of its potential to cure – rather than merely treat
disease –regenerative medicine offers the opportunity to
combat rising health care costs. The state of Michigan,
similar in size to North Carolina, estimates **it could
save \$80 million per year if regenerative medicine
therapies reduced health care costs and lost
productivity by just ONE PERCENT.***

Accelerator



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graph TD; Accelerator[Accelerator] --> PreClinical([Pre-Clinical Facility]); Accelerator --> Incubator[Incubator]; Accelerator --> JobCreation([Job Creation]); PreClinical --> RegulatoryAffairs([Regulatory Affairs]); RegulatoryAffairs --> GMPFDA([GMP FDA Approved Facility]); GMPFDA --> JobCreation
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The diagram illustrates the structure of an Accelerator program. At the top is a large teal rectangle labeled 'Accelerator'. Three thick black arrows point downwards from this rectangle to three separate components: 'Pre-Clinical Facility' (a teal oval on the left), 'Incubator' (a brown rectangle in the center), and 'Job Creation' (a teal oval on the right). Below 'Pre-Clinical Facility', a thick black arrow points to 'Regulatory Affairs' (a teal oval). A thick black arrow then points from 'Regulatory Affairs' to 'GMP FDA Approved Facility' (a teal oval). Finally, a thick black arrow points from 'GMP FDA Approved Facility' up to 'Job Creation'.

**Pre-Clinical
Facility**

Incubator

Job Creation

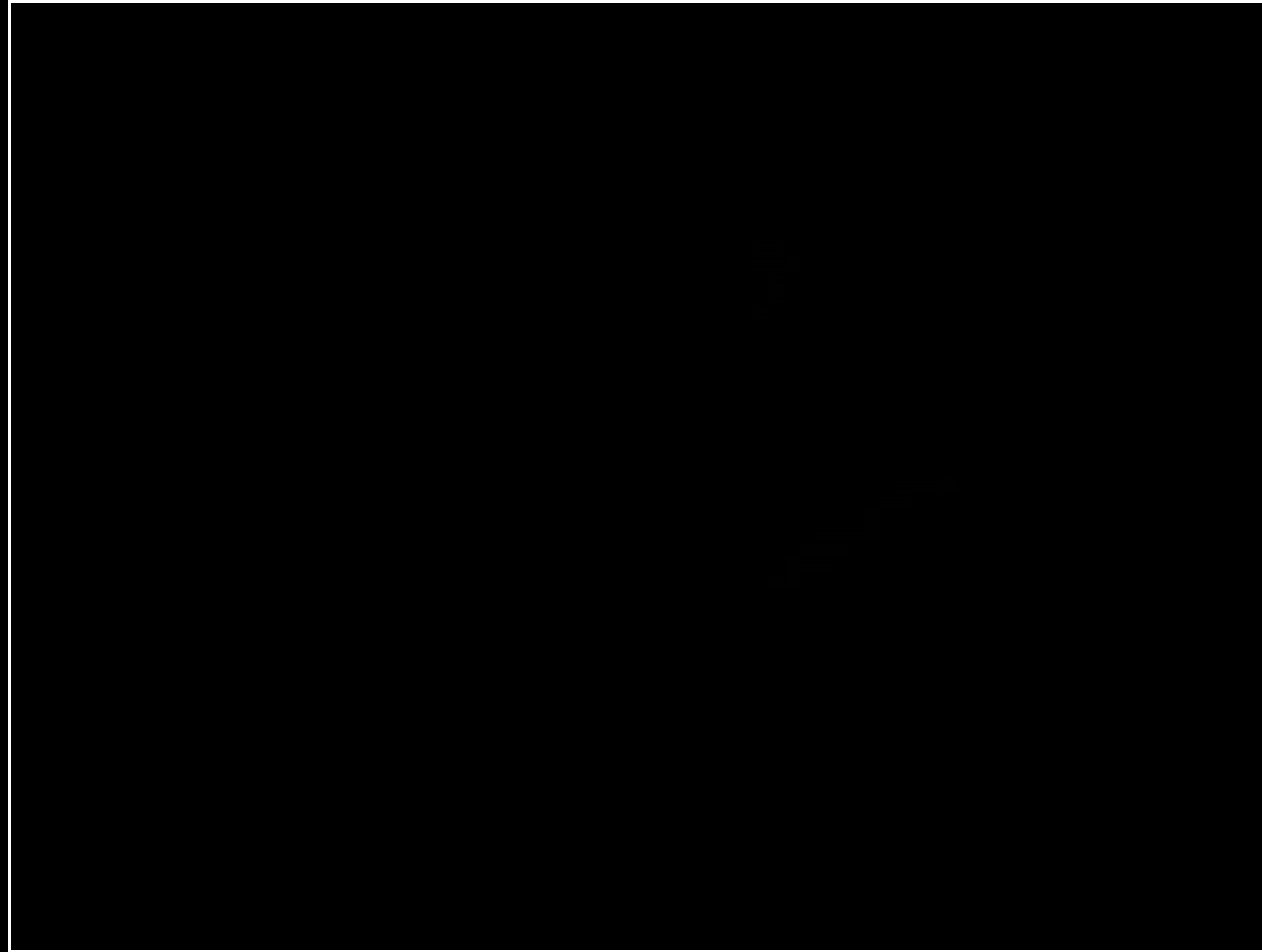
**Regulatory
Affairs**

**GMP FDA
Approved
Facility**

Mission

*Improve patients lives by developing
regenerative medicine therapies
and support technologies*

Kaitlyn, a few years after having her engineered organ...



Courtesy of CNN