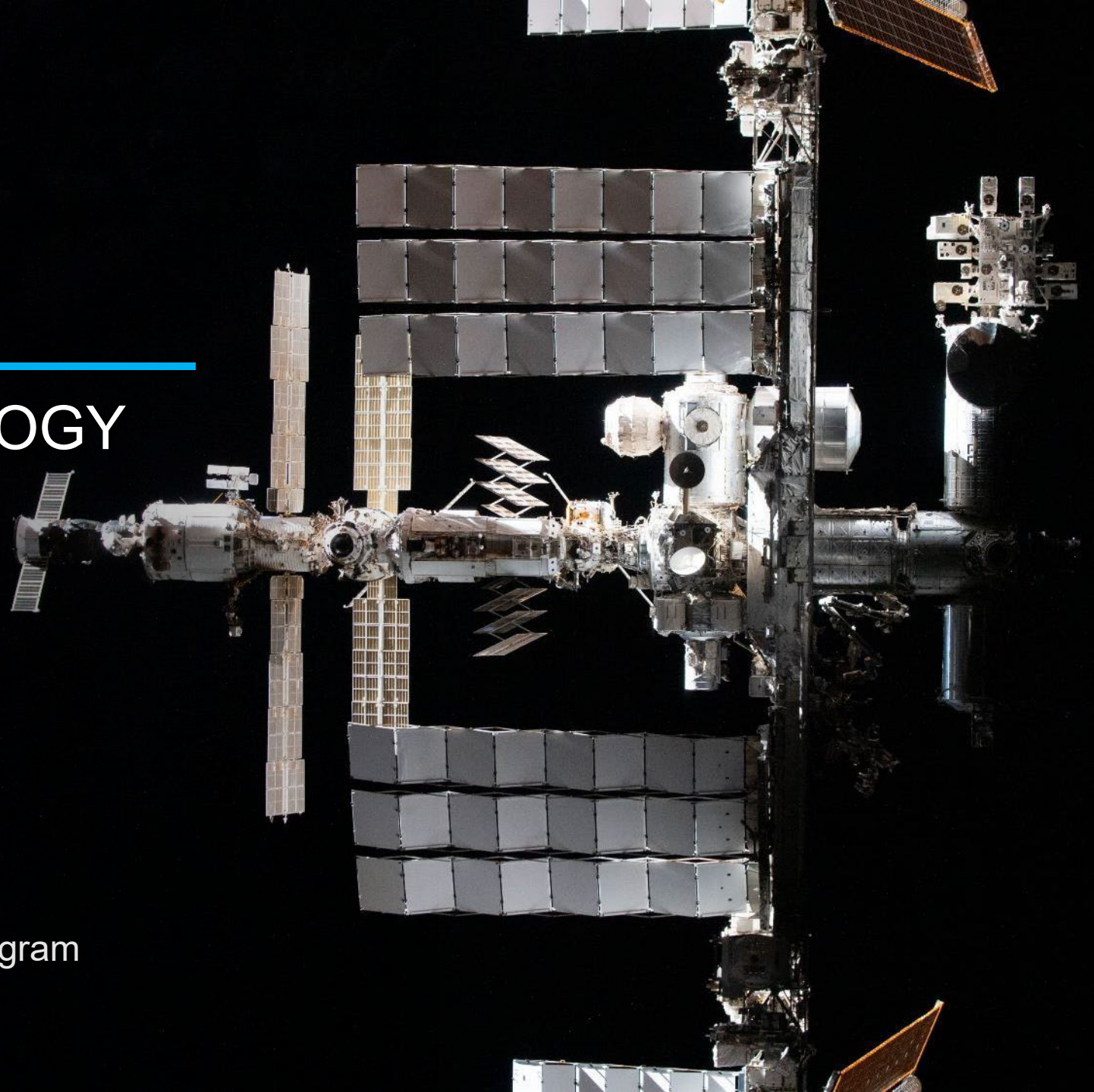
INTERNATIONAL SPACE STATION

ADVANCING HUMAN BIOLOGY IN MICROGRAVITY



Jennifer Buchli

Chief Scientist, International Space Station Program

INTERNATIONAL SPACE STATION

HUMANITY'S LAB IN SPACE

WHY DO RESEARCH ON STATION?

SUSTAINED MICROGRAVITY eliminates gravity-driven effects, allowing researchers to understand other factors

Unique **EXTREME ENVIRONMENT** including hard vacuum, thermal variation, and radiation

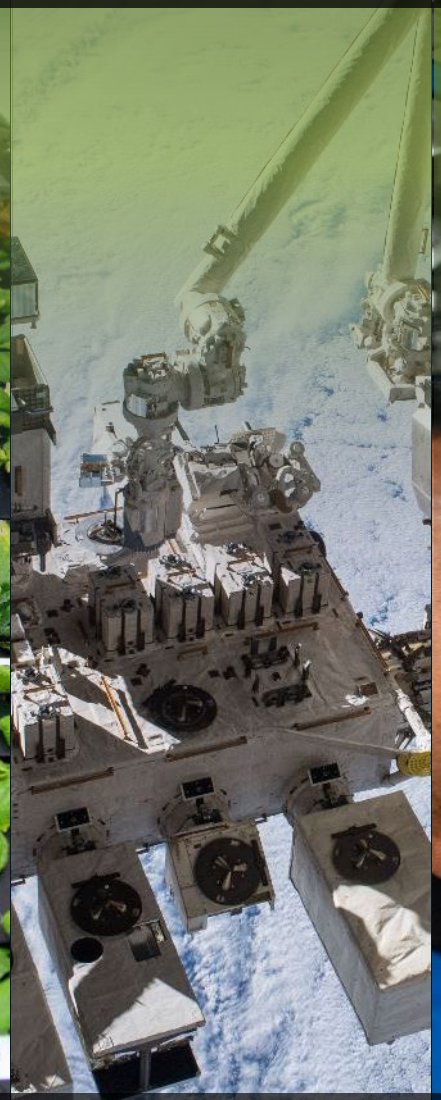
Low Earth orbit provides a unique **VANTAGE POINT** on our planet

WHAT TYPE OF RESEARCH DO WE CONDUCT ON STATION?

- Every major scientific discipline
- More than 5,000 researchers
- More than 4,000 experiments
- Over 100 nations

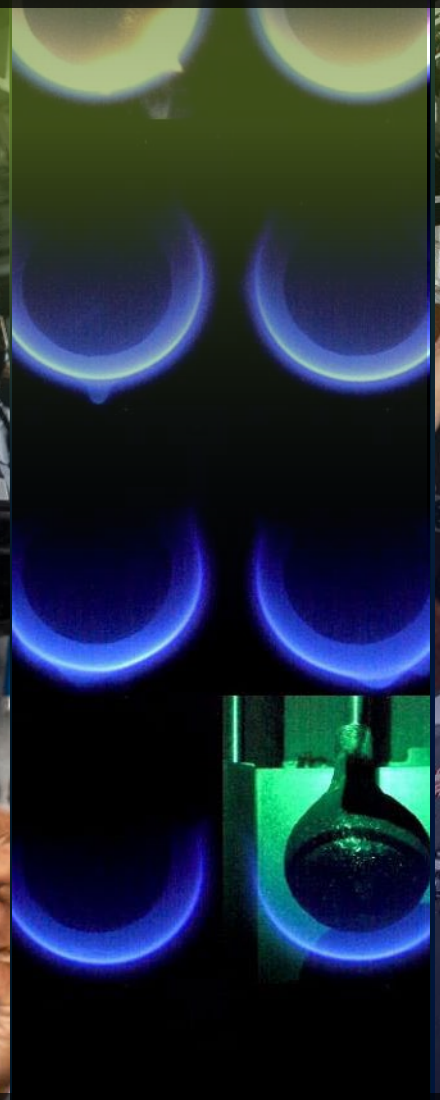
RESEARCH IN MICROGRAVITY

Biology & Biotechnology

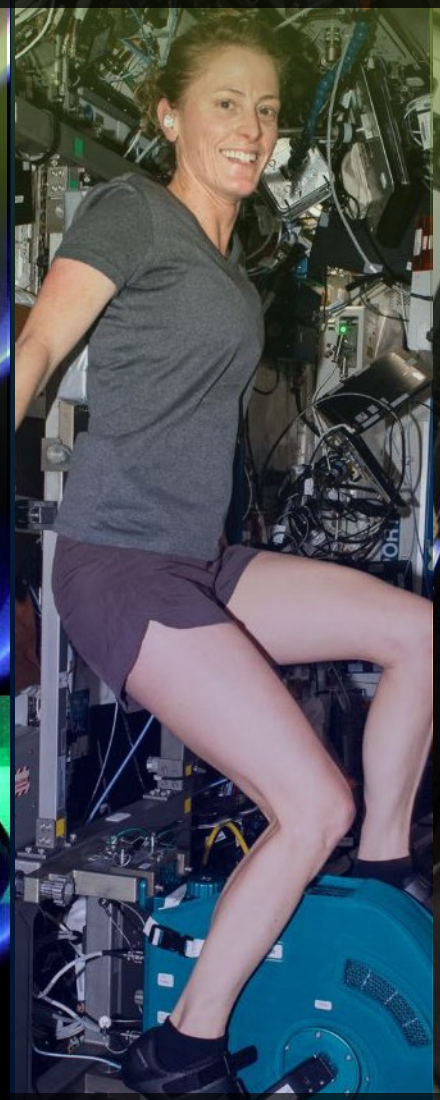


Earth & Space Science

Educational Activities



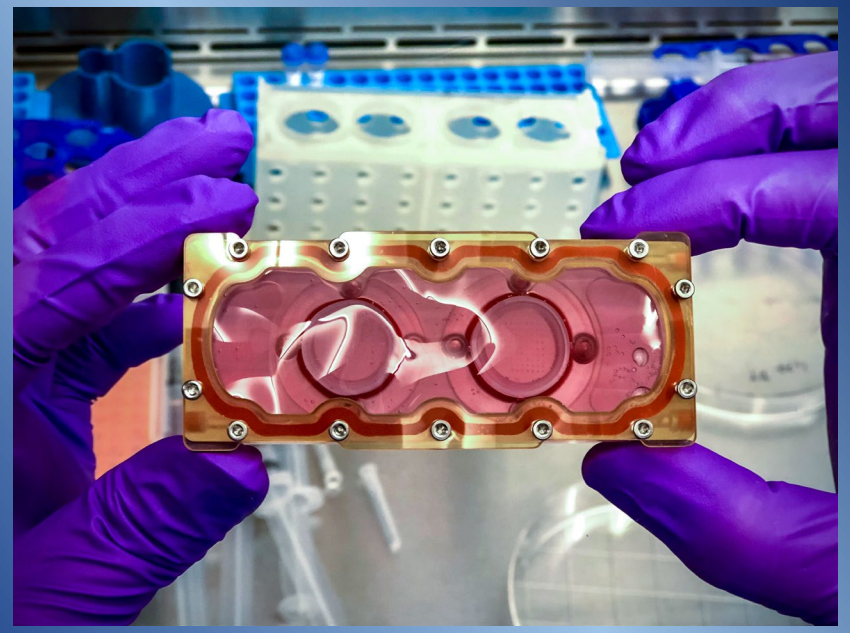
Physical Science

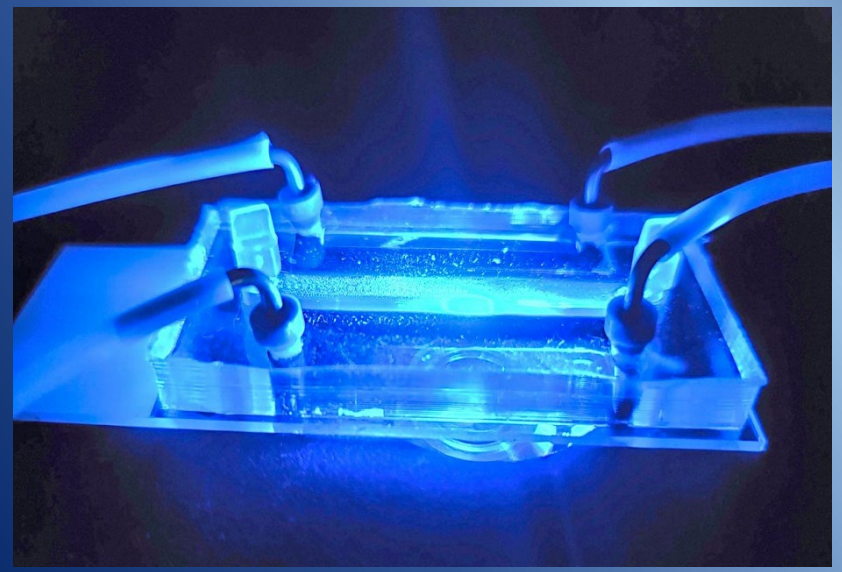


Human Research

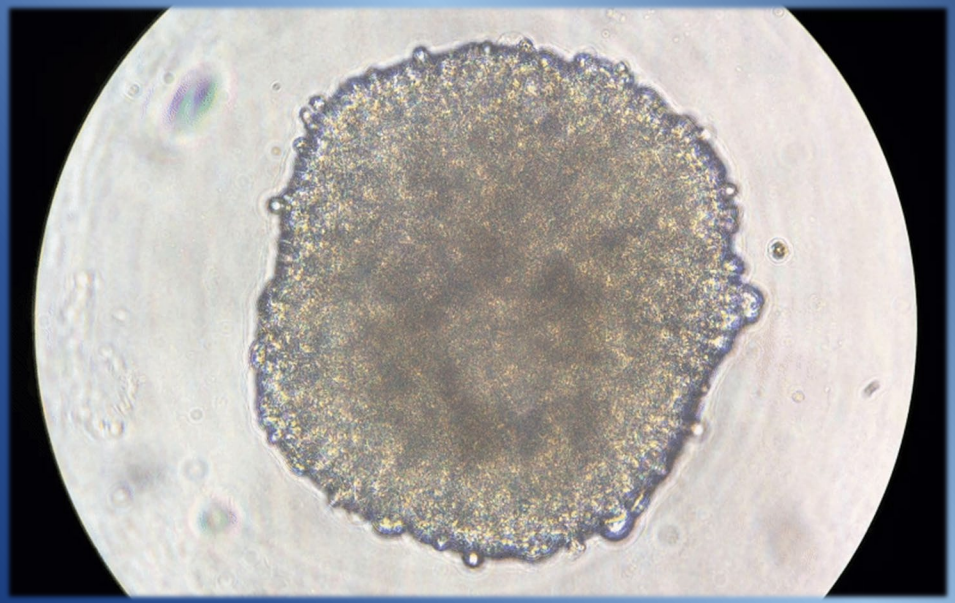
Technology Demonstration

TISSUE ENGINEERING & TISSUE CHIPS

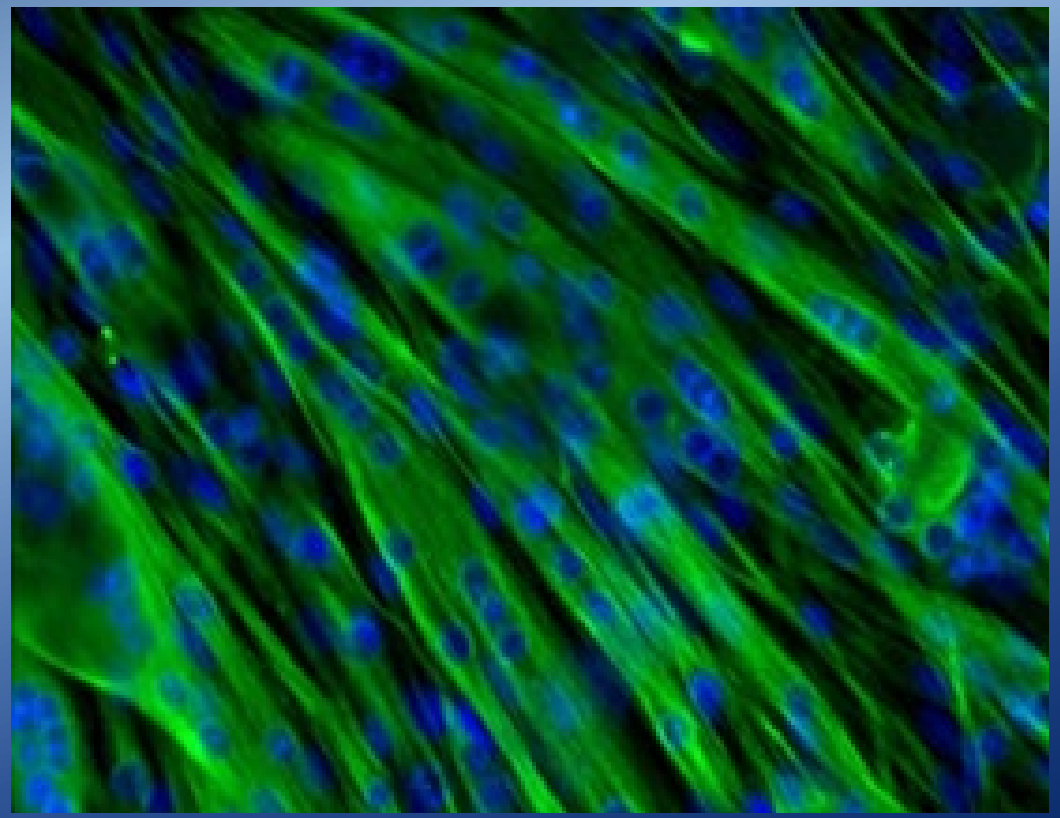




MODELING HEART FUNCTION



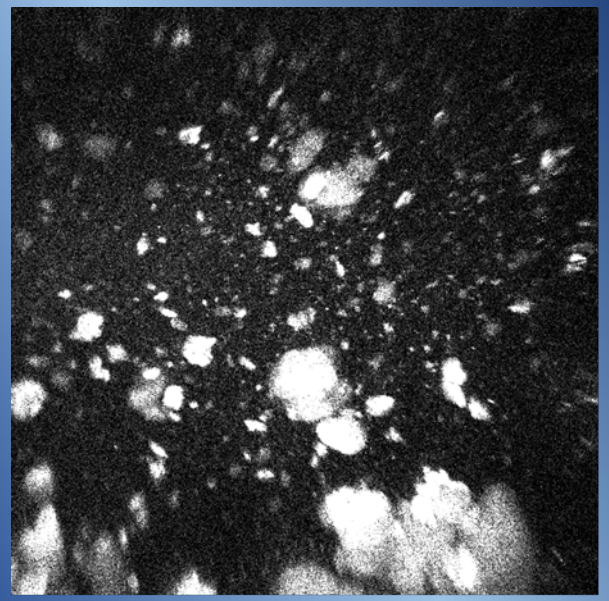
MODELING MUSCLE FUNCTION

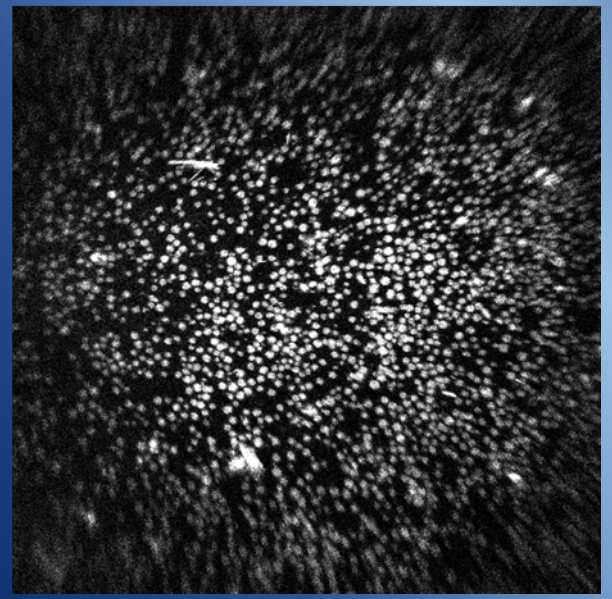


A MULTIPATH APPROACH TO ADDRESSING CANCER

- Protein Crystal Growth
- Nanoparticle Drug Delivery
- Tissue Engineering and Stem Cells

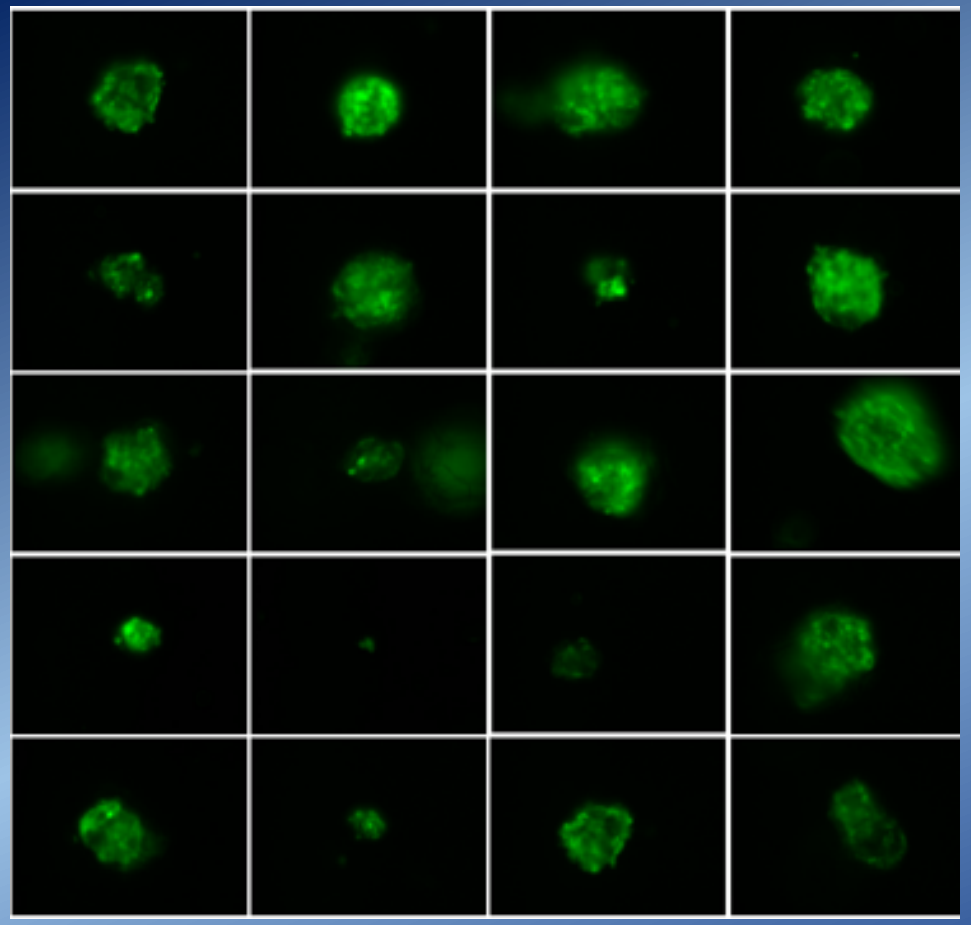
PROTEIN CRYSTAL GROWTH

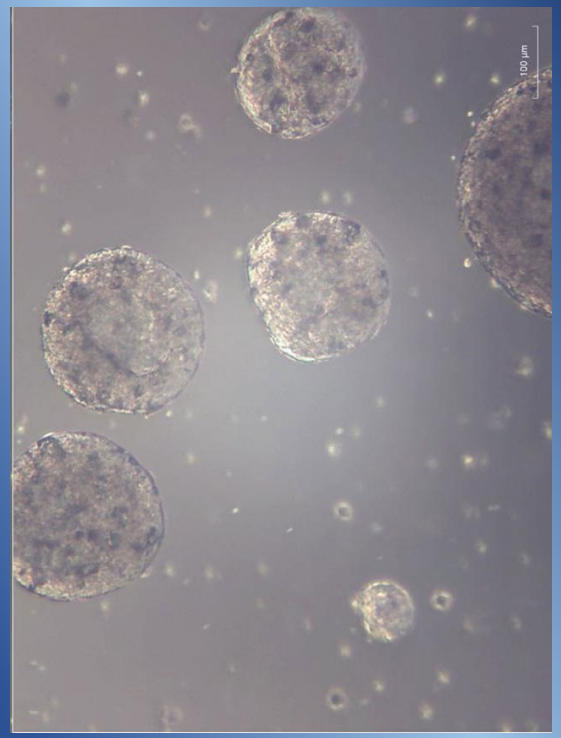


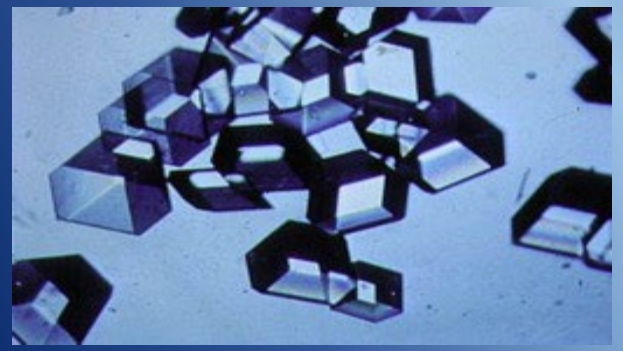


NANOPARTICLE DRUG DELIVERY

TISSUE ENGINEERING AND STEM CELLS

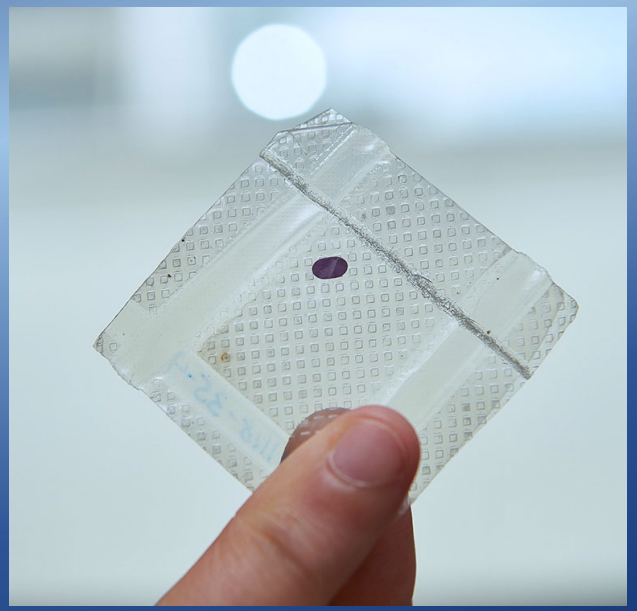




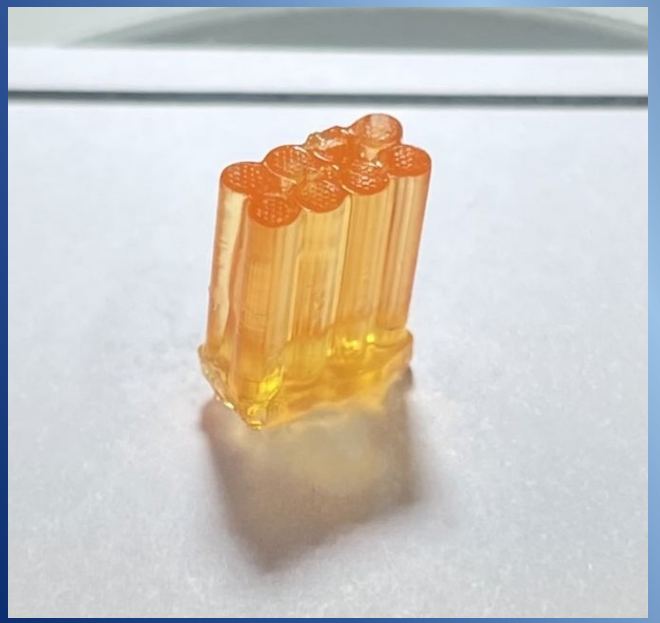


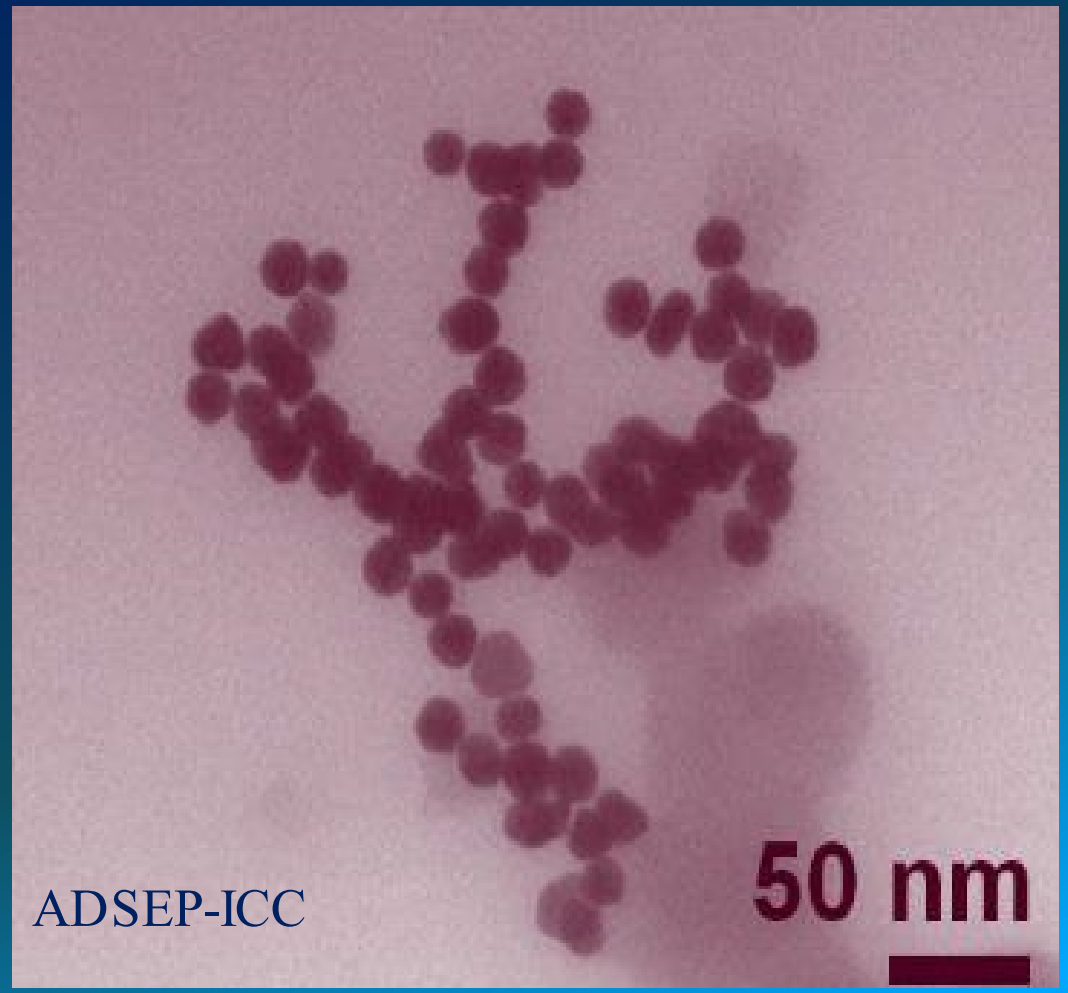
IN SPACE PRODUCTION APPLICATIONS

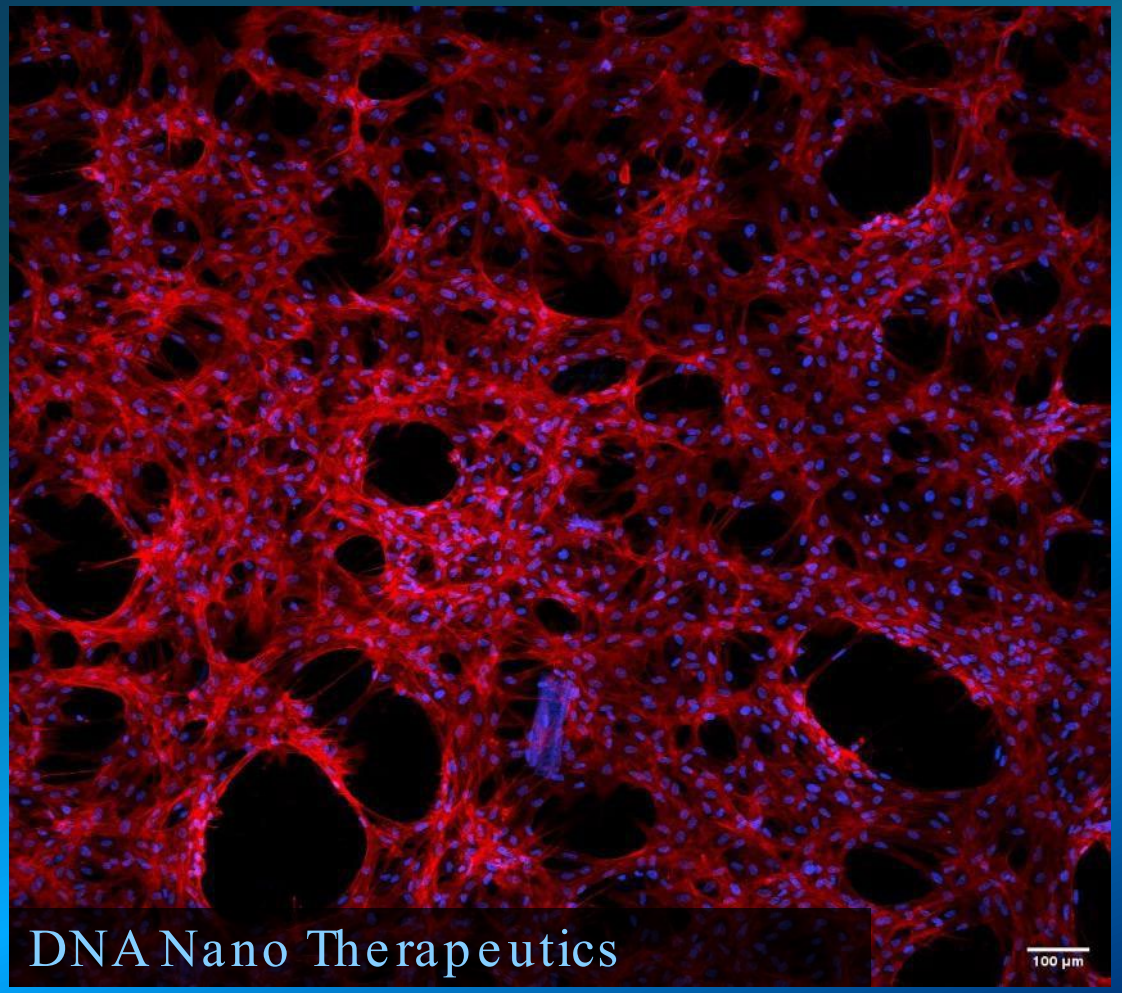
ARTIFICIAL RETINA MANUFACTURING



3D PRINTING MEDICAL DEVICES







NANOMATERIALS

FOLLOW THE MISSION

@ Space_Station

@ISS

@ NASA