

## The Problems

- Can we restore and remodel diseased organs?
- Can we extend postmortem organ transplantability?
- Can we test preclinical drugs safely in human organs?

## The Solution

**OrganEx:** salvaging, remodeling, and testing intact organs *ex vivo*

## The Team



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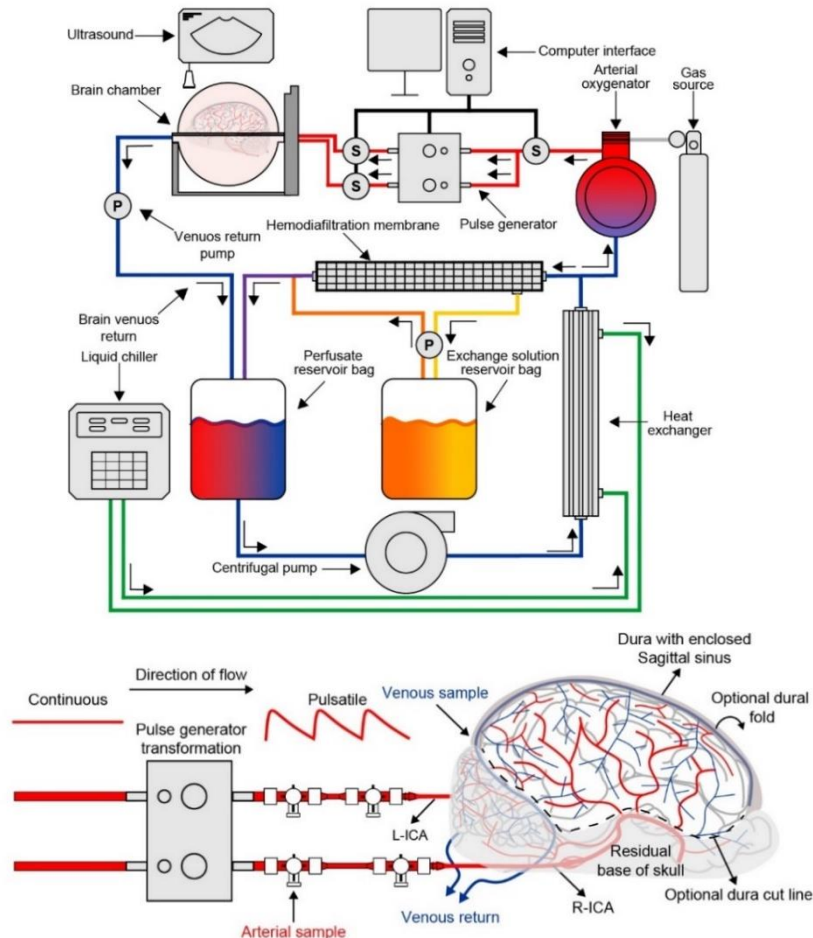
# OrganEx: salvaging, remodeling, and testing intact organs *ex vivo*

## BrainEx: one application of the OrganEx technology

R&D: 4+ years >\$7.7M in NIH Funding

### Proprietary Perfusion Platform

(Patent Pending)



### Proprietary Perfusate

(Patent Pending)

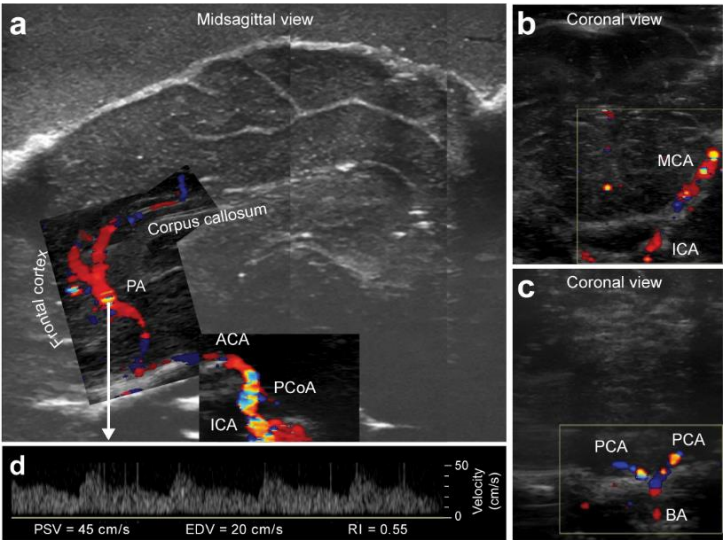
Synthetic, acellular, anticoagulative, echogenic and cytoprotective perfusate

- Rational polytherapy formulation
  - Hemoglobin-based gas exchange system
    - Implemented in collaboration with HbO<sub>2</sub> Therapeutics®
- Cell death antagonists
- Oxidative stress inhibitors
- Free radical scavengers
- Inflammatory mediators
- Protease inhibitors
- Neurotoxic channel blockers

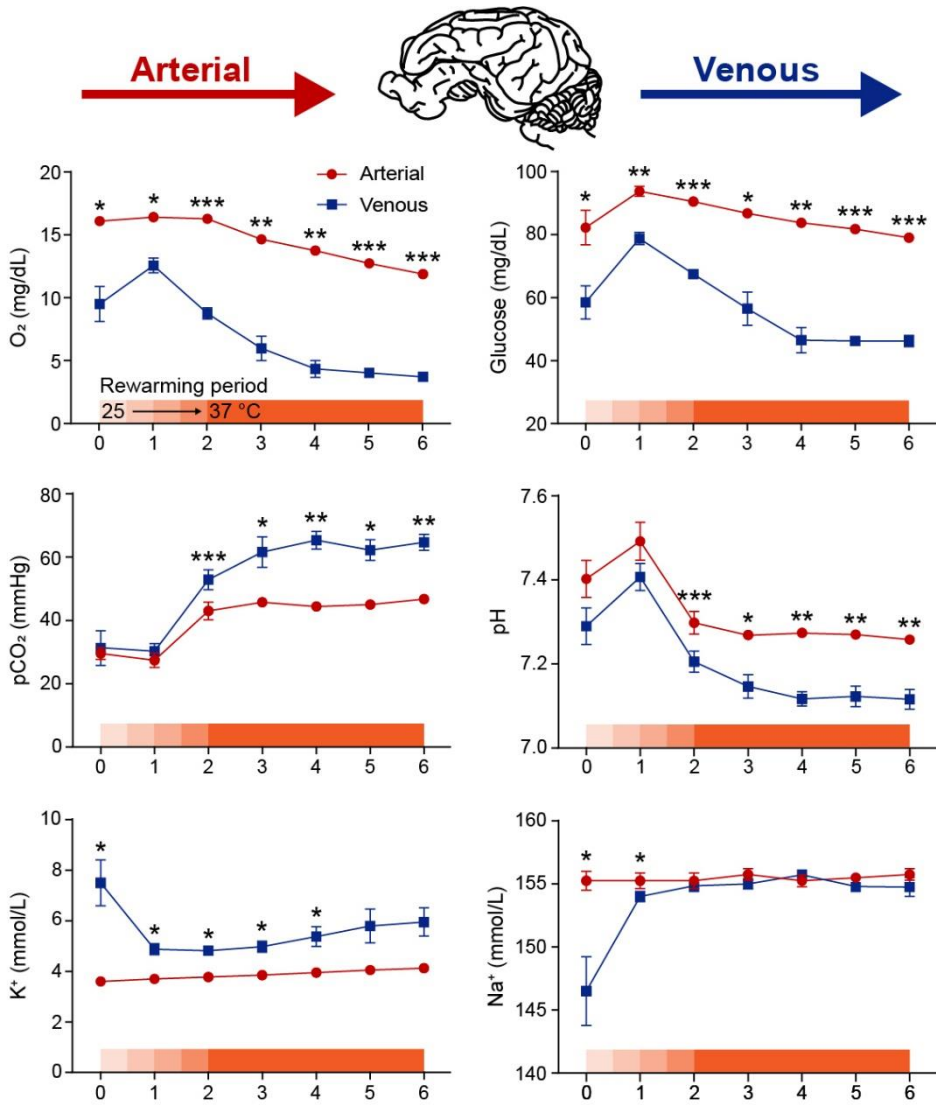
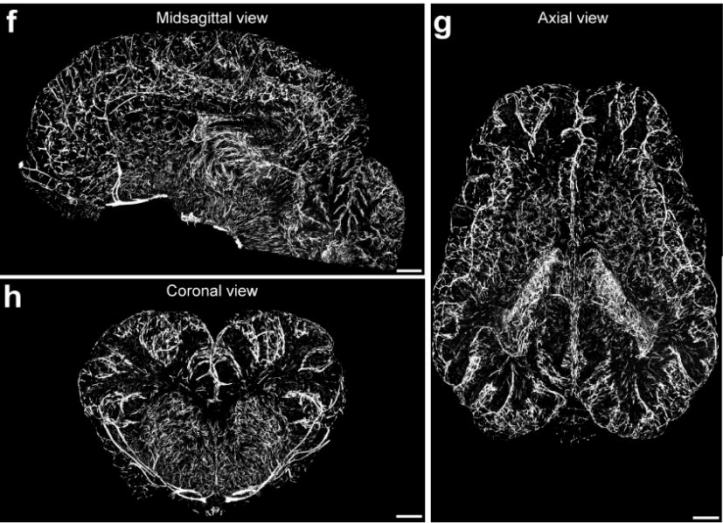
Vrselja & Daniele et al., under revised review

# Restored microcirculation and global cerebral metabolism in 4hr postmortem porcine brains

## Doppler Ultrasound

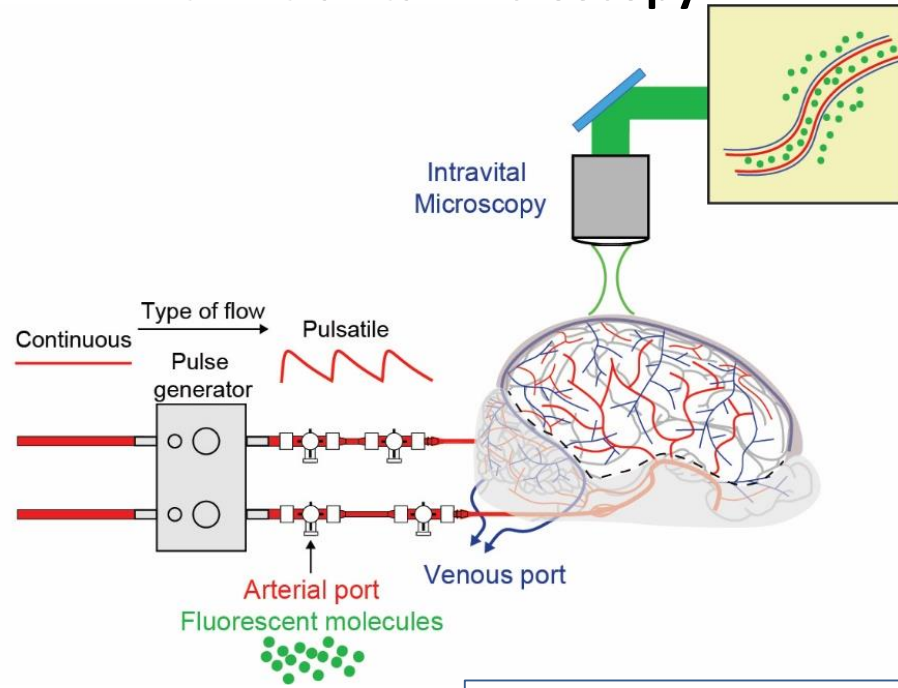


## Global Micro-CTA (bismuth nanoparticles)

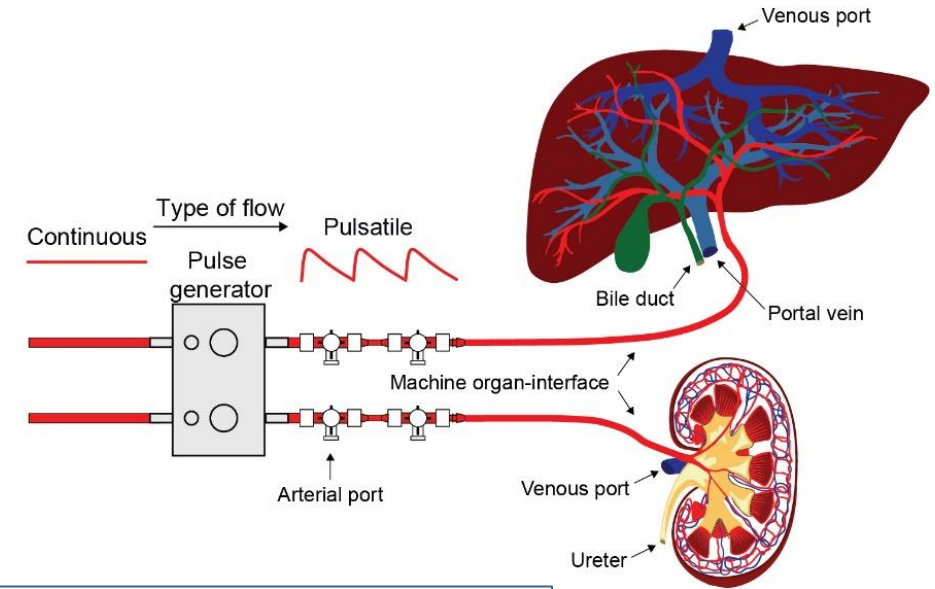


# Novel applications of the OrganEx technology as an experimental platform & CRO service

## BBB-penetrance, PK/PD, clearance studies with intravital microscopy



## Ex vivo perfusion for salvaging marginal organs for R&D and transplantation studies



### The Market

1. CNS therapeutics and organ transplantation markets are expected to grow to **\$128.9 B** and **\$51.0 B** by 2025, respectively (Grand View Research).
2. **~90%** of Pharma companies outsource preclinical testing to CRO's (Tufts CSDD).
3. U.S. CRO's **quadrupled** (800-3,200) between 2000-2011 (Tufts CSDD).

# Competitive landscape: OrganEx is superior to existing perfusion systems

System	Computerized	Pulsatile Perfusion	Multi-organ Compatibility	Hypo- vs normothermic	Physiologic Homeostatic mechanisms	Imaging Compatibility	Customizable Cardiovascular Waveforms	Multi-tiered Cytoprotective Perfusate	Research Platform
Organ Transport Systems	✓	✗	✗	✗	✗	✗	✗	✗	✗
Waters Medical Systems	✓	✓	✗	✗	✗	✗	✗	✗	✗
Xvivo Perfusion	✓	✓	✗	✗	✗	✗	✗	✗	✗
TransMedics	✓	✓	✓	✓	✗	✗	✗	✗	✗
OrganEx	✓	✓	✓	✓	✓	✓	✓	✓	✓



# Blavatnik Objectives, Timeline, and Milestones

