Innovation in Vascular Surgery and Access



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Disclosure Information

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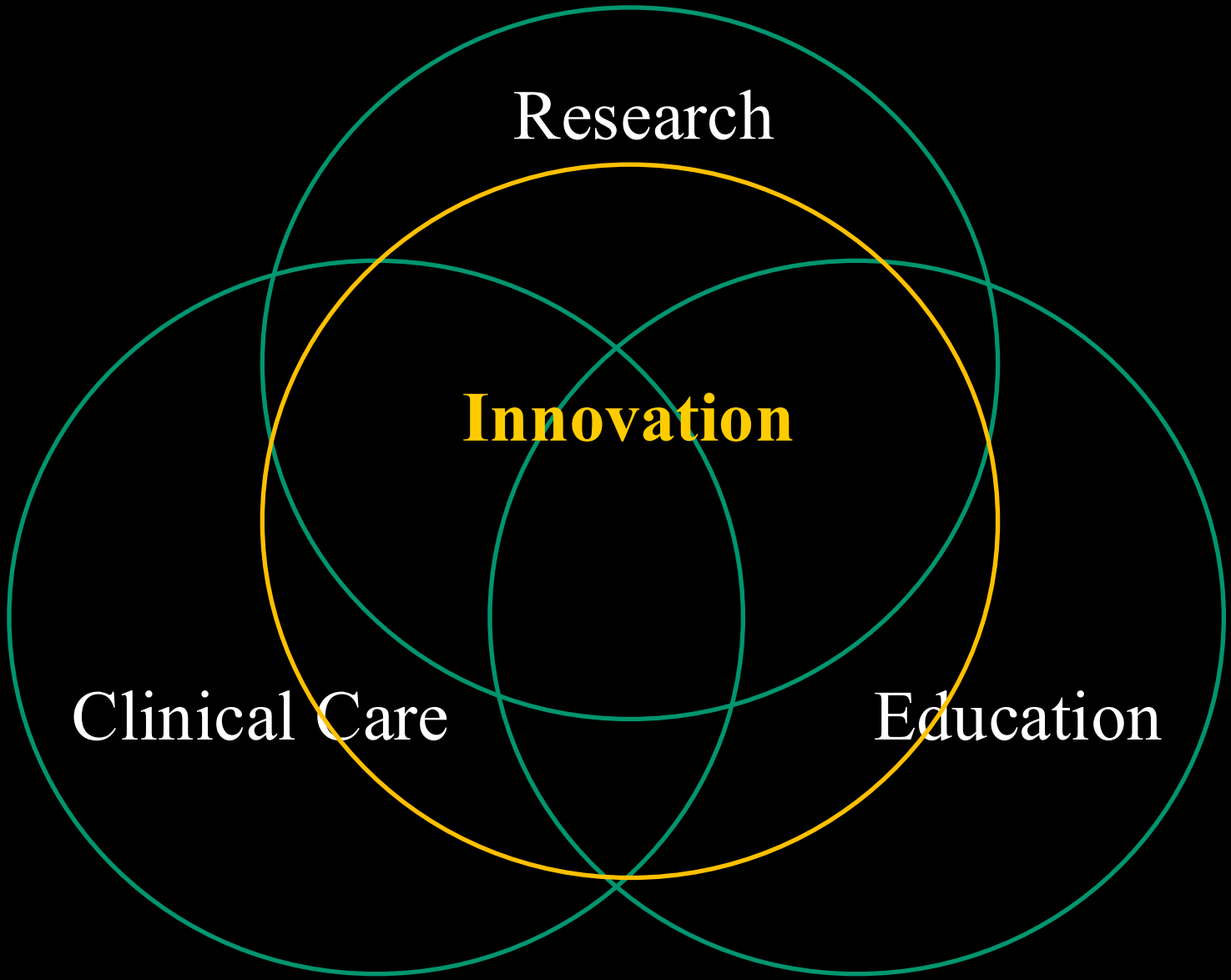
No Disclosures

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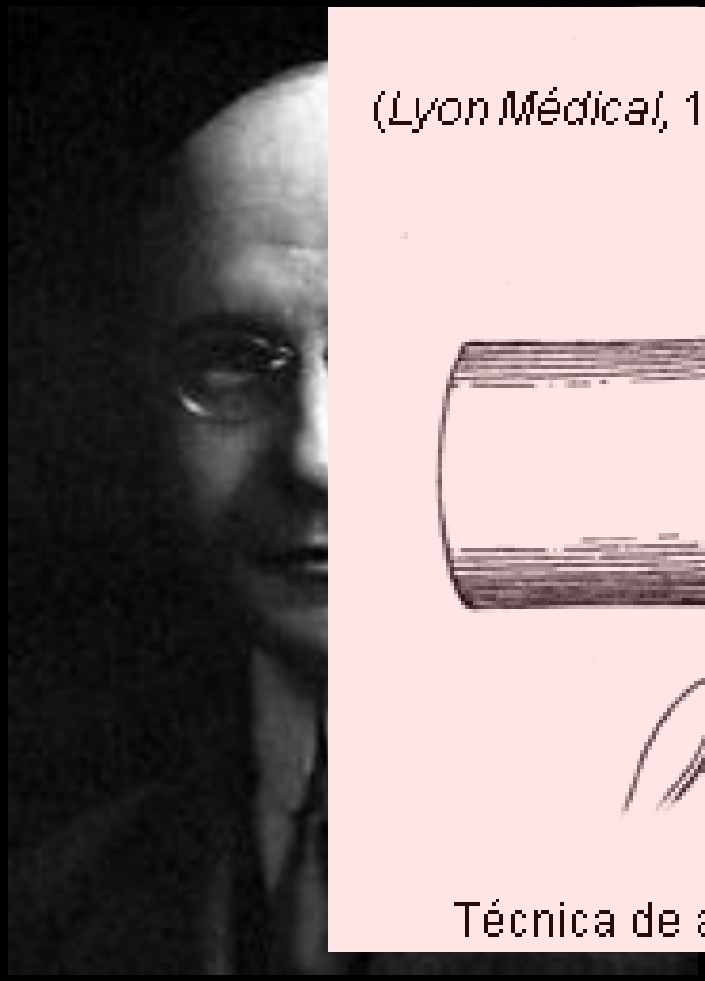
Bias….

As scientist and healthcare providers we should not only be engaged in the practice of medicine, but should also be **fundamentally** committed to changing medical care through **research**, **education** and **innovation**.

Innovation



Alexis Carrel



Técnica de anastomosis vascular, según Carrel



Nobel Prize in Medicine - 1912

Willem Kolff



Belding Scribner



Beldi

In 1960[1)], Dr. Scribner, working with Wayne Quinton and David Dillard, perfected the Scribner shunt, a Teflon device that allowed patients for the first time to be connected repeatedly to hemodialysis machines thereby launching the era of modern renal replacement therapy as well as the clinical discipline of nephrology as we now know it.

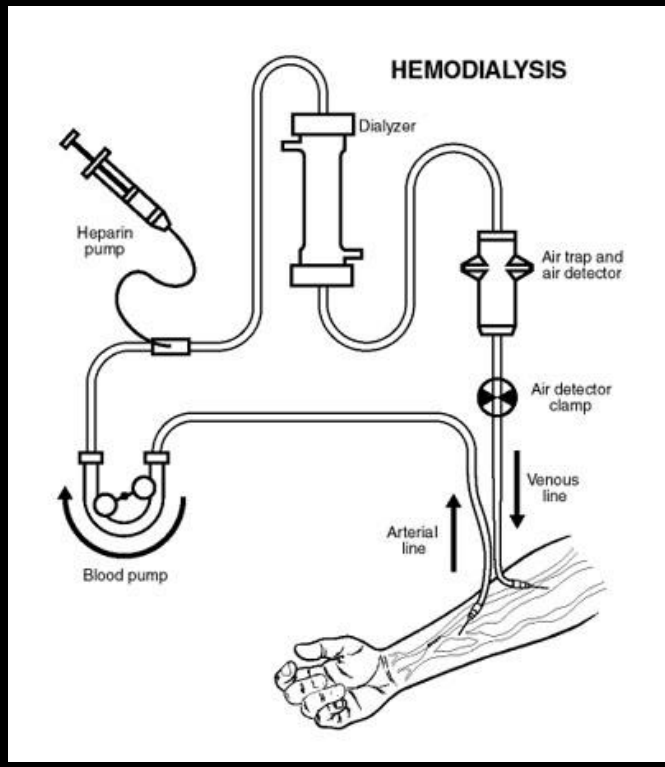









F80A
F8
F60S


HEMODIALYSIS
Dialyzer
Heparin pump
Air trap and air detector
Air detector clamp
Venous line
Arterial line
Blood pump

Start with a Problem













Break the Problem Down to Solvable Elements

Bleeding

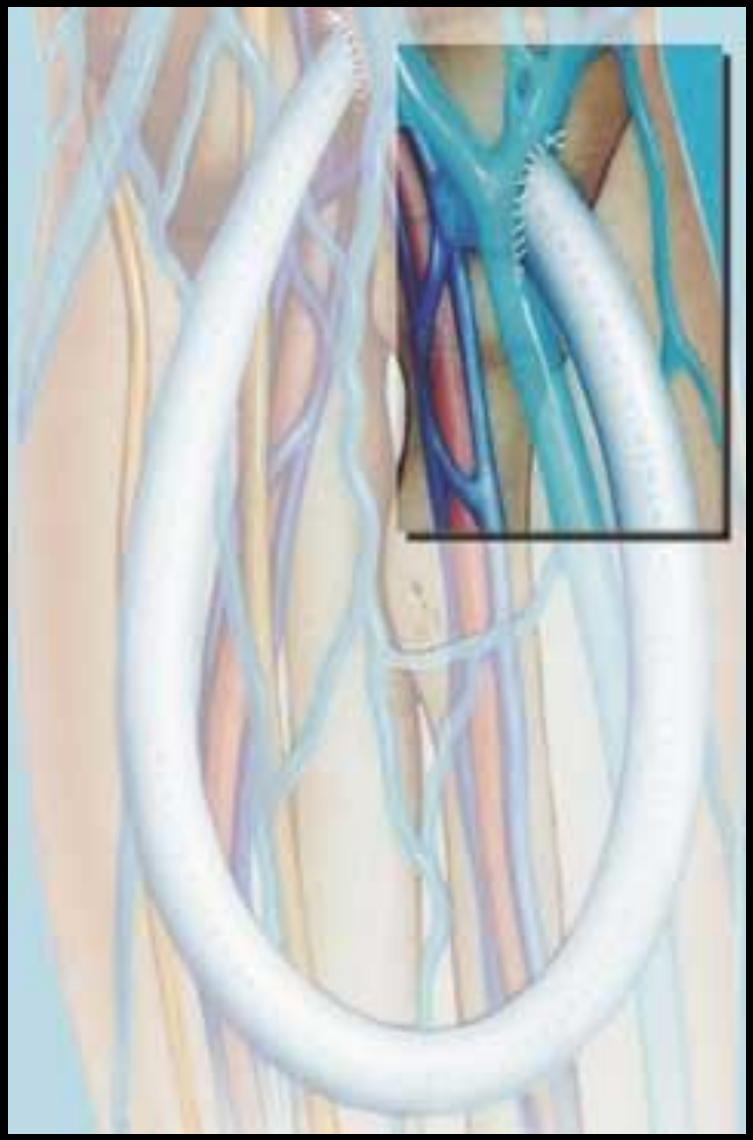
Thrombosis

Proliferation

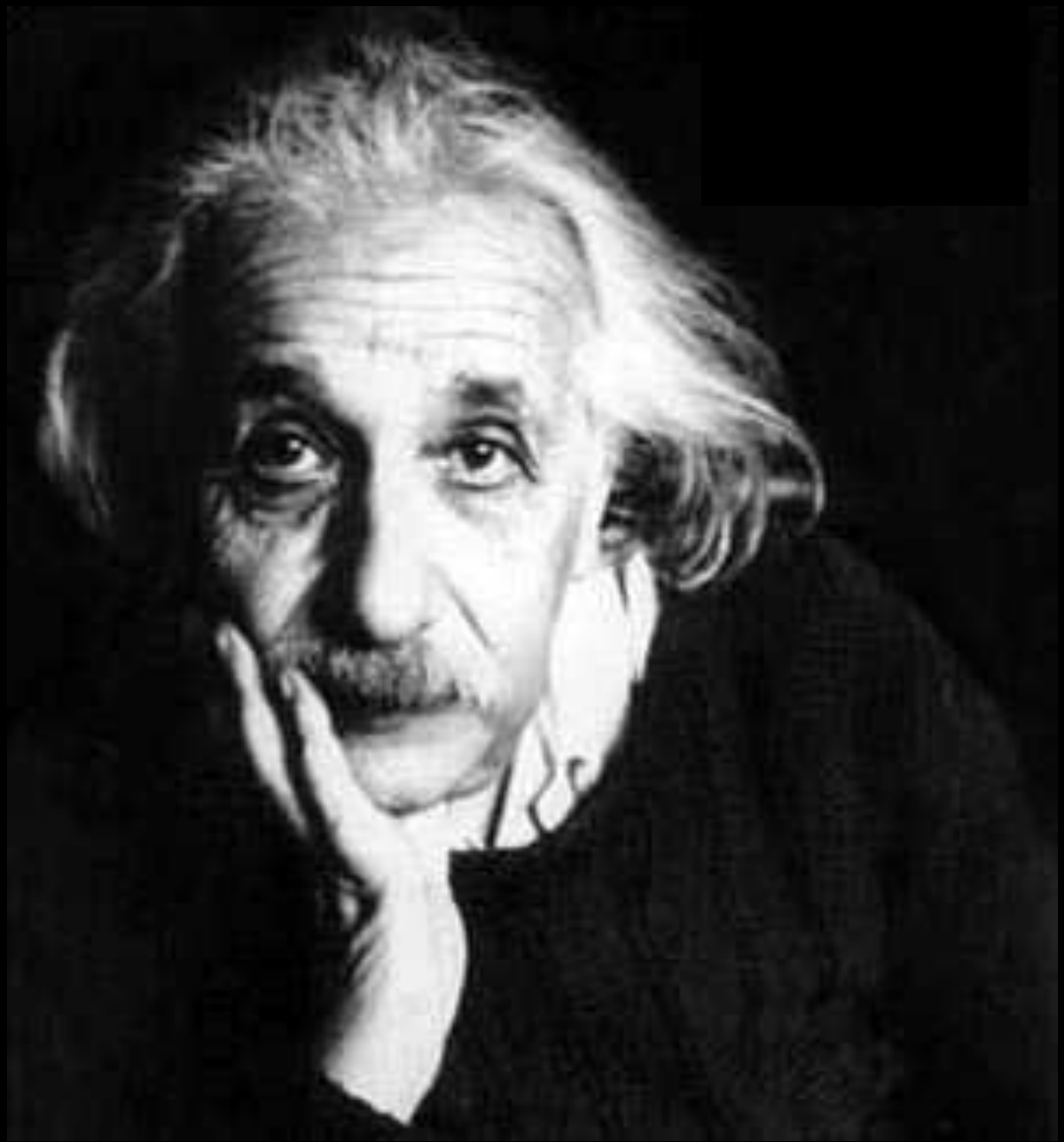
Physiology

Infection

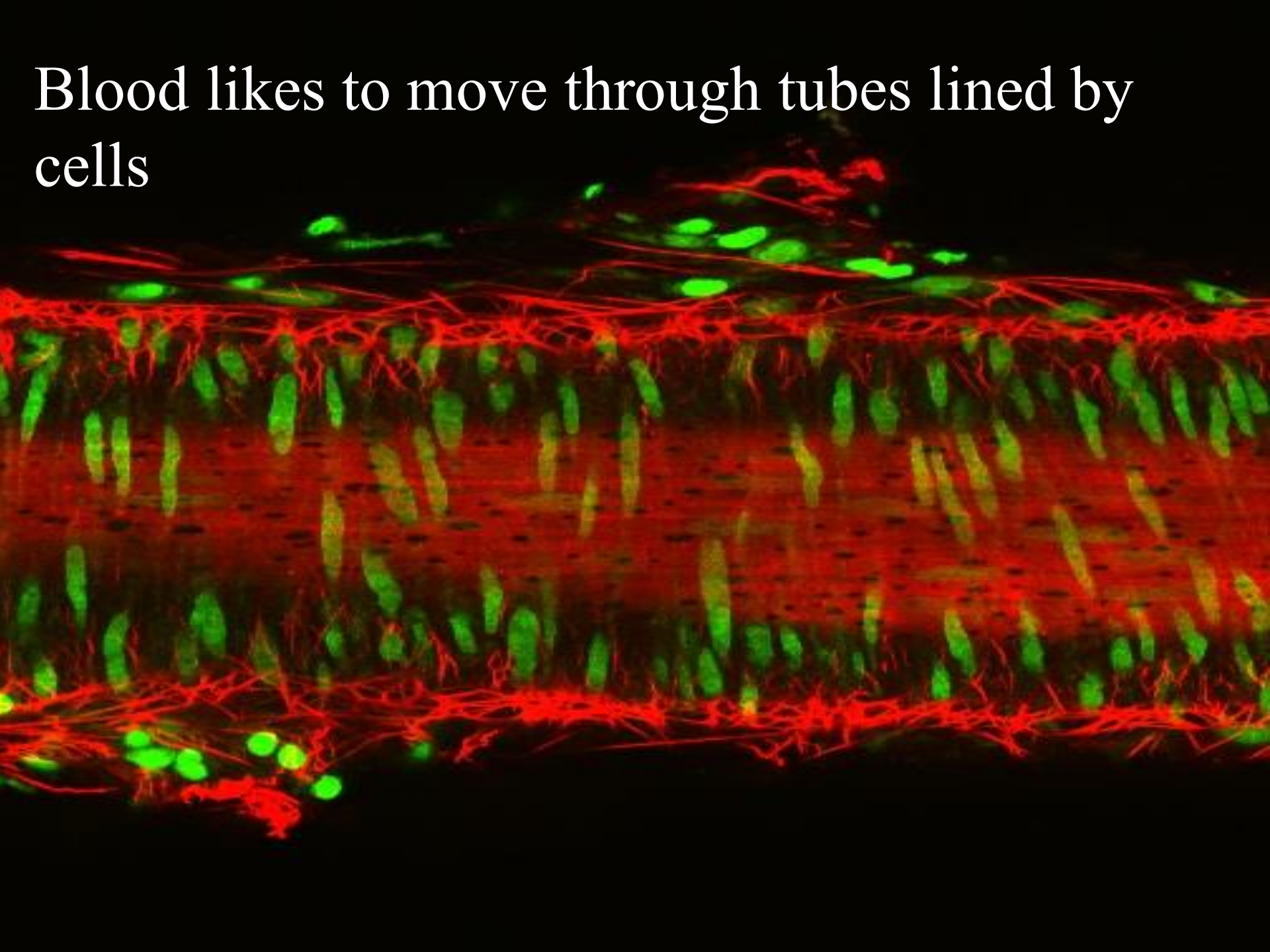
Abuse

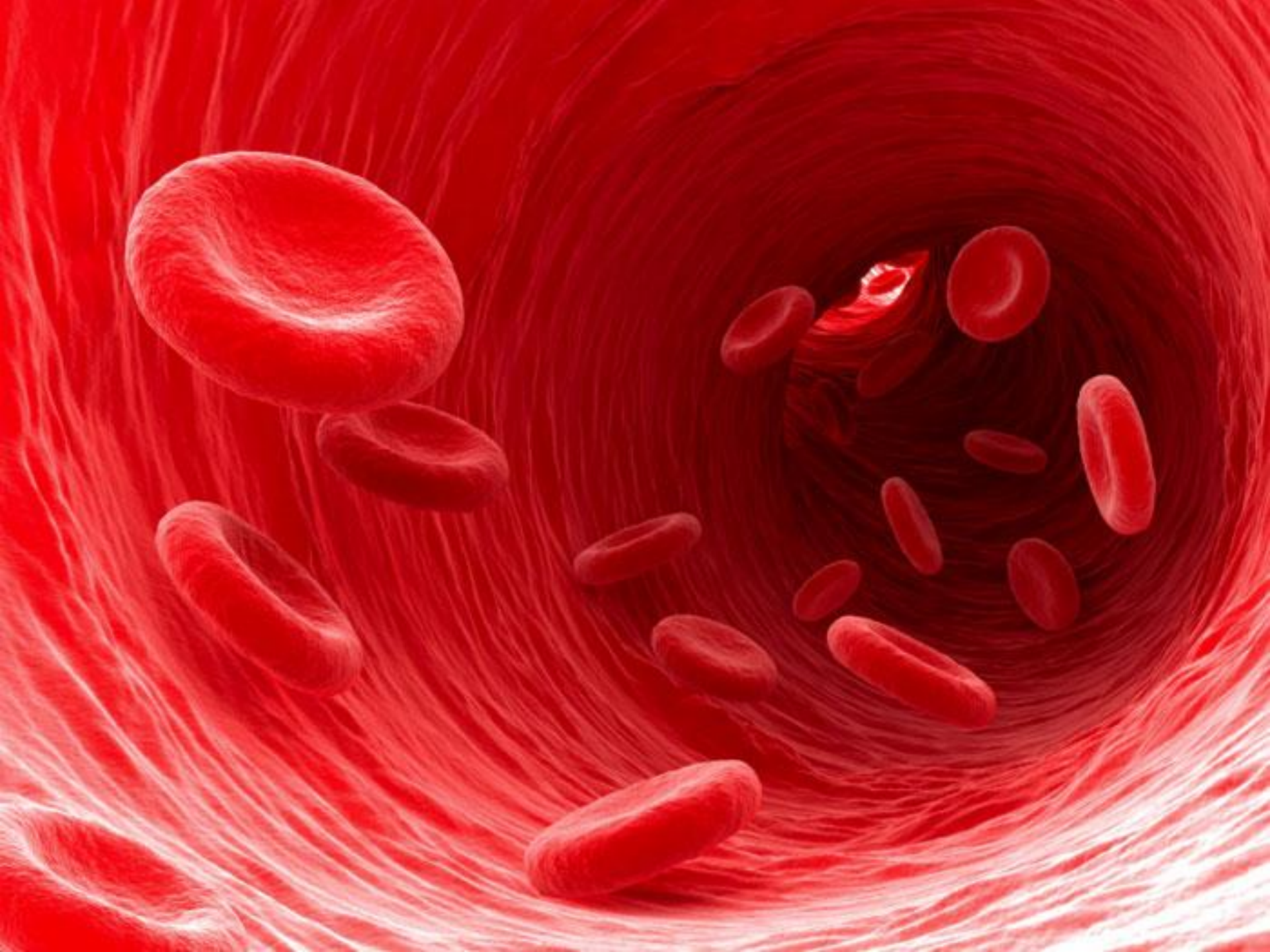


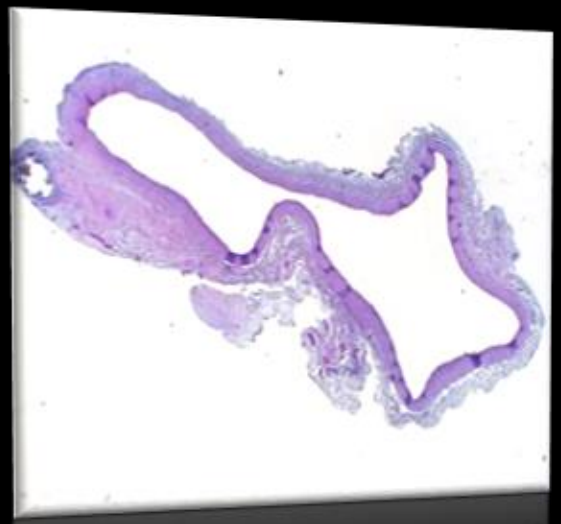
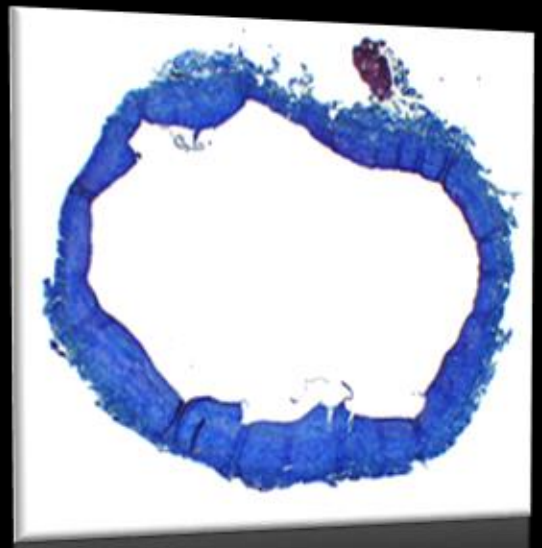
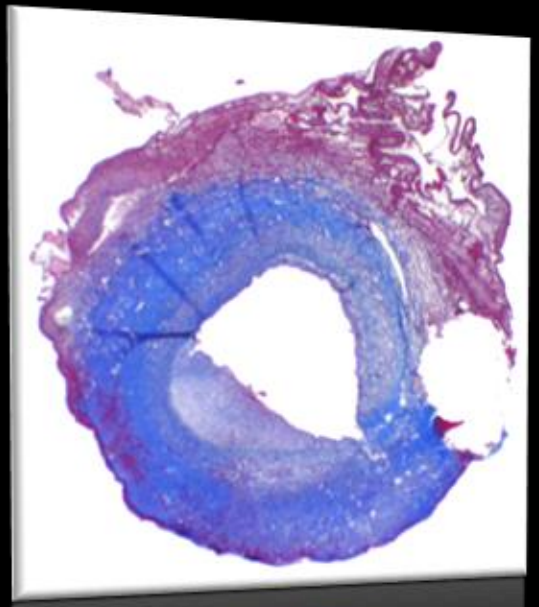
Think of a Solution



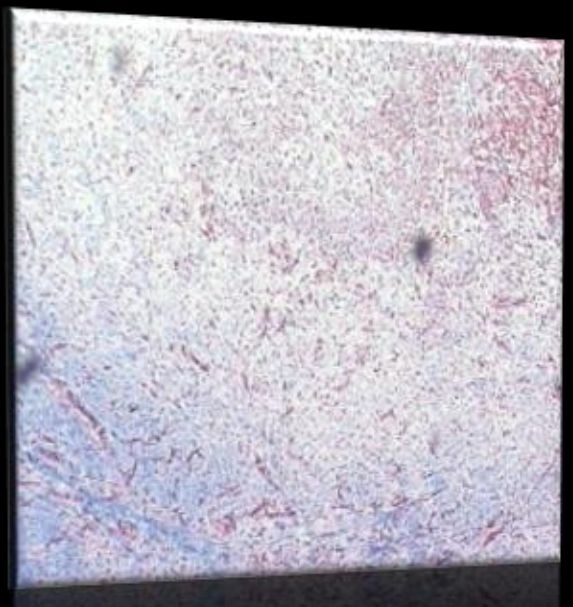
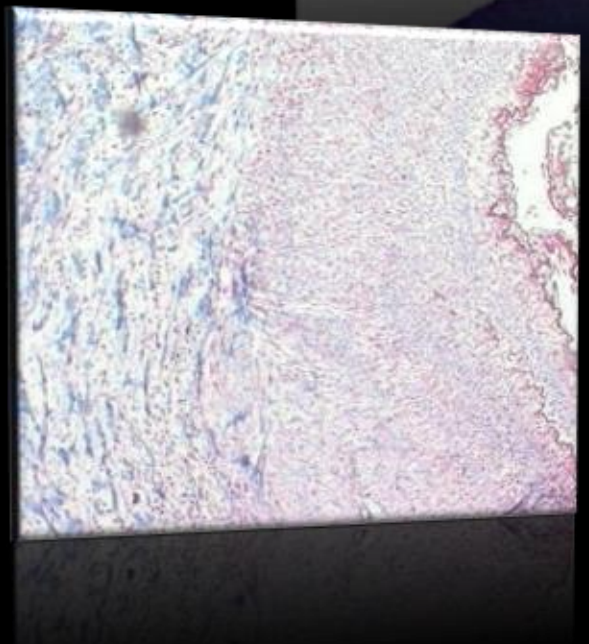
Blood likes to move through tubes lined by cells





Even the best veins don't like being arteries





Cannulation



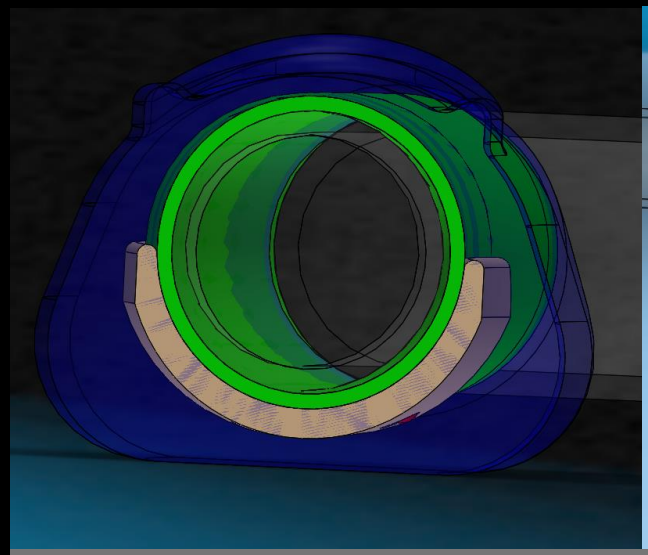


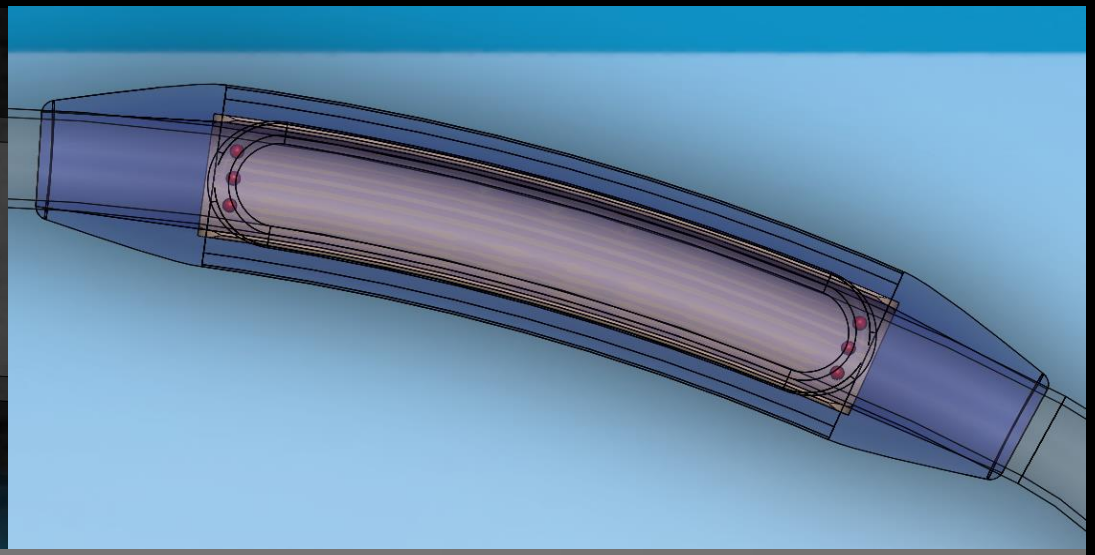


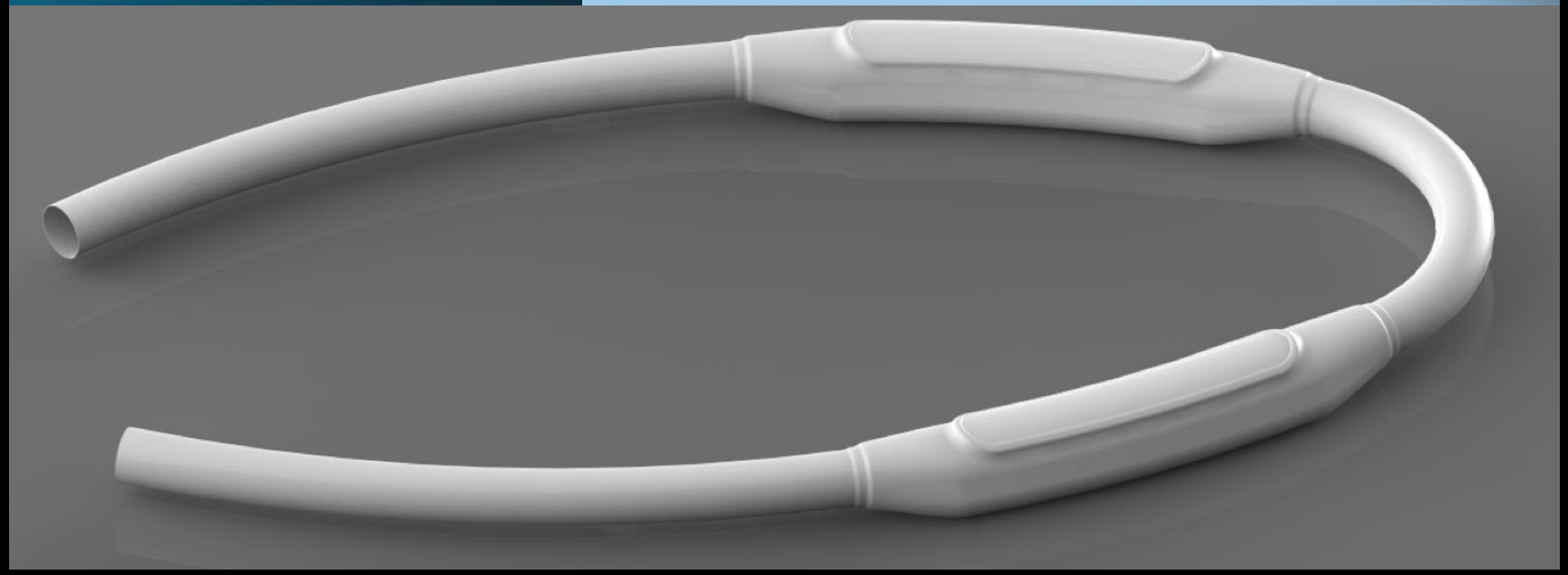




Make a Prototype







Protect the Idea (IP)

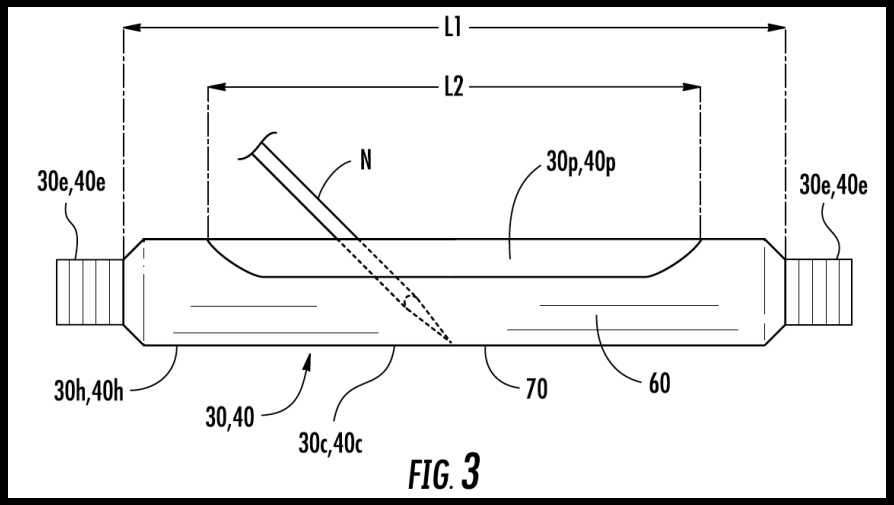


FIG. 3

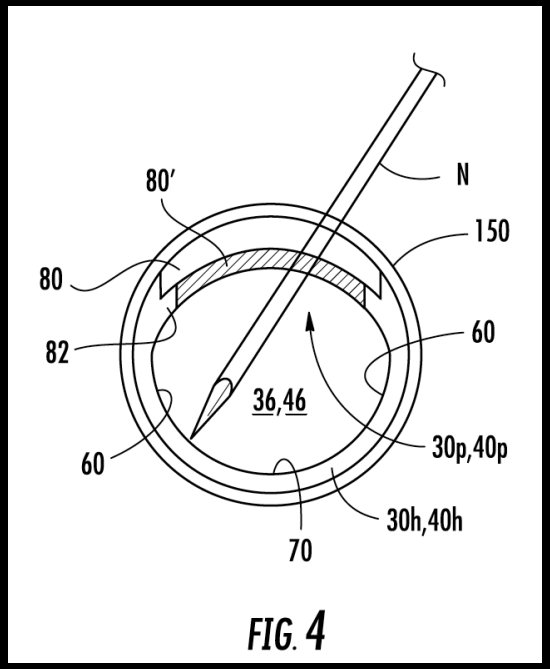


FIG. 4

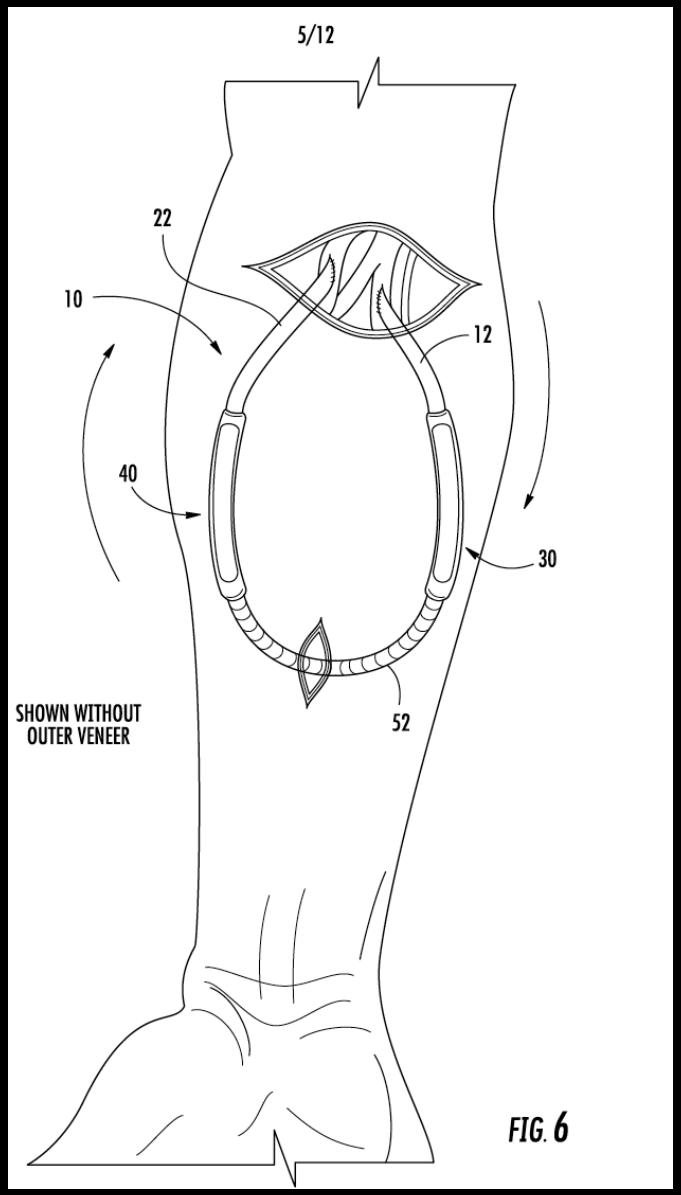


FIG. 6

Find Funding

- Write a grant
- Form a company
- Find a partner
- Hand off your idea

- Time
- Control

No idea moves forward without Money!!!





Build a Team



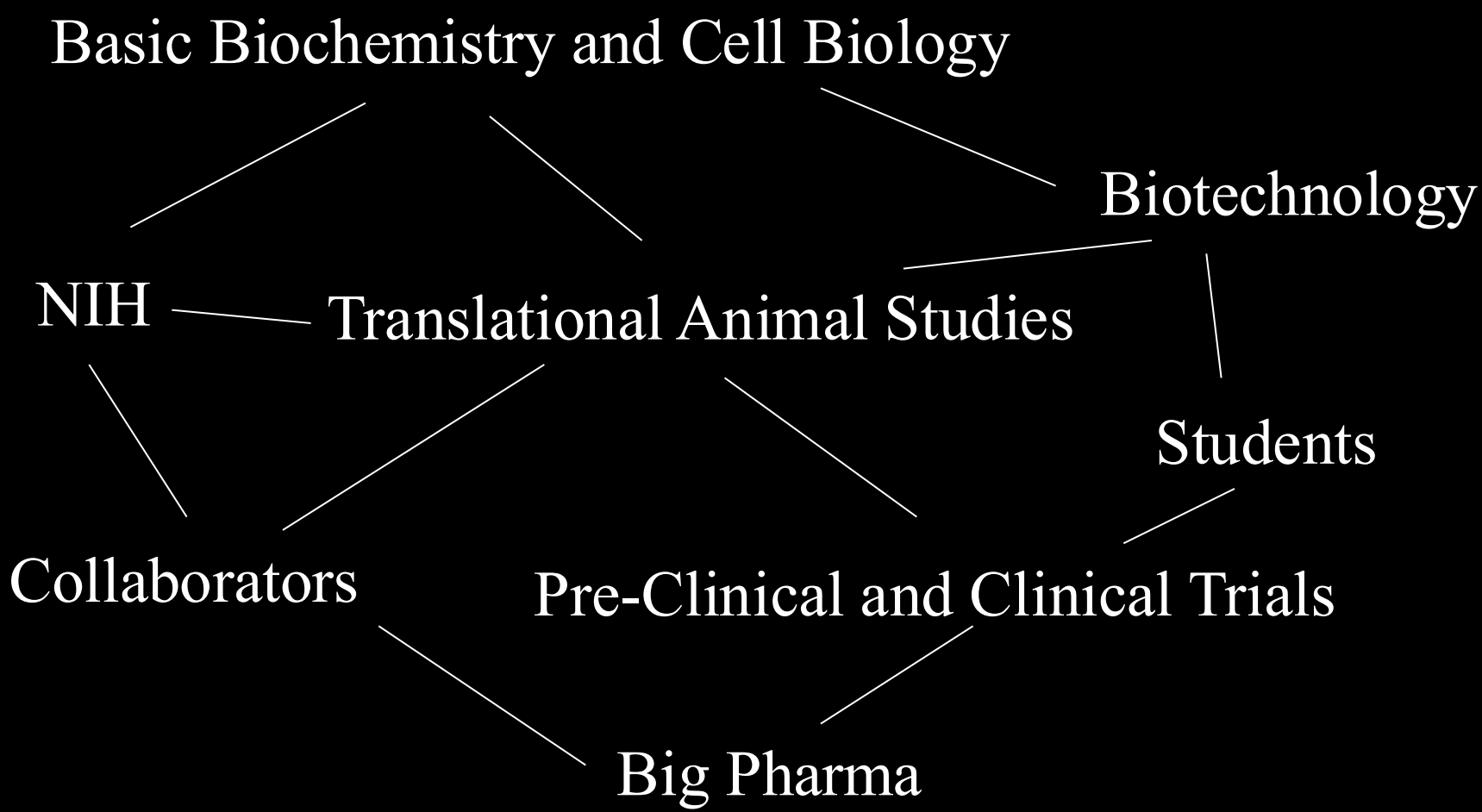
Do the Research

Basic Biochemistry and Cell Biology

Translational Animal Studies

Pre-Clinical and Clinical Trials

Build a Web


Basic Biochemistry and Cell Biology
Biotechnology
NIH
Translational Animal Studies
Students
Collaborators
Pre-Clinical and Clinical Trials
Big Pharma

Meet the Regulators

FDA
EMA
CHMP
PMDA



Ask for a meeting to explain your idea and get their impression of the regulatory path forward… and be nice

FDA

EUROPEAN MEDICINES AGENCY
SCIENCE MEDICINES HEALTH


Sometimes your only available transportation
is a leap of faith
- MARGARET SHEPARD -
SYMPHONY OF LOVE
PHOTO BY RISTO KUULASMAA



Teach Your Idea



Market Your Idea



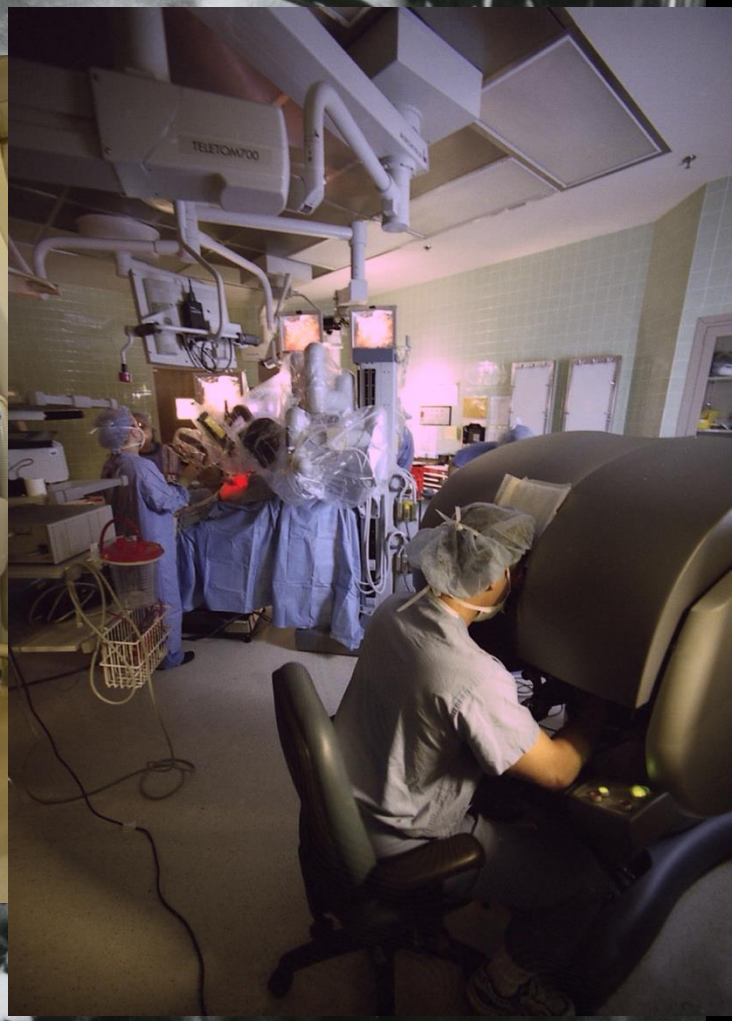






Adapting Environments





With Compassion and Humanity



For Everyone

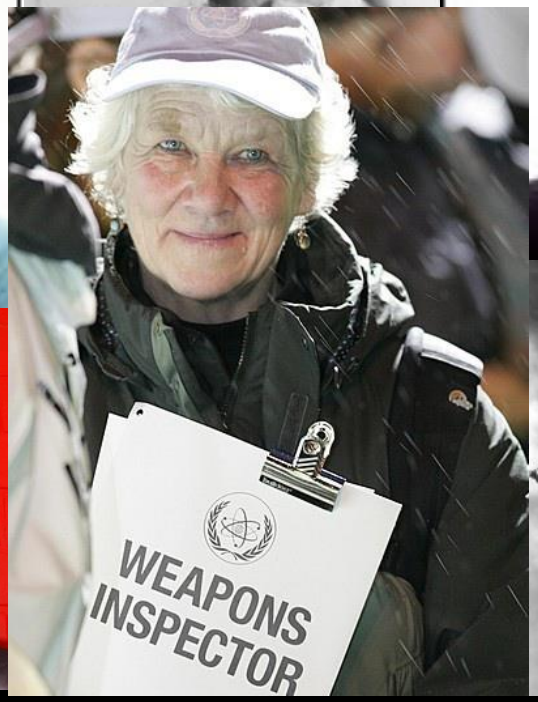






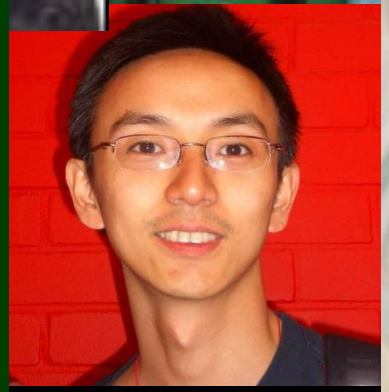










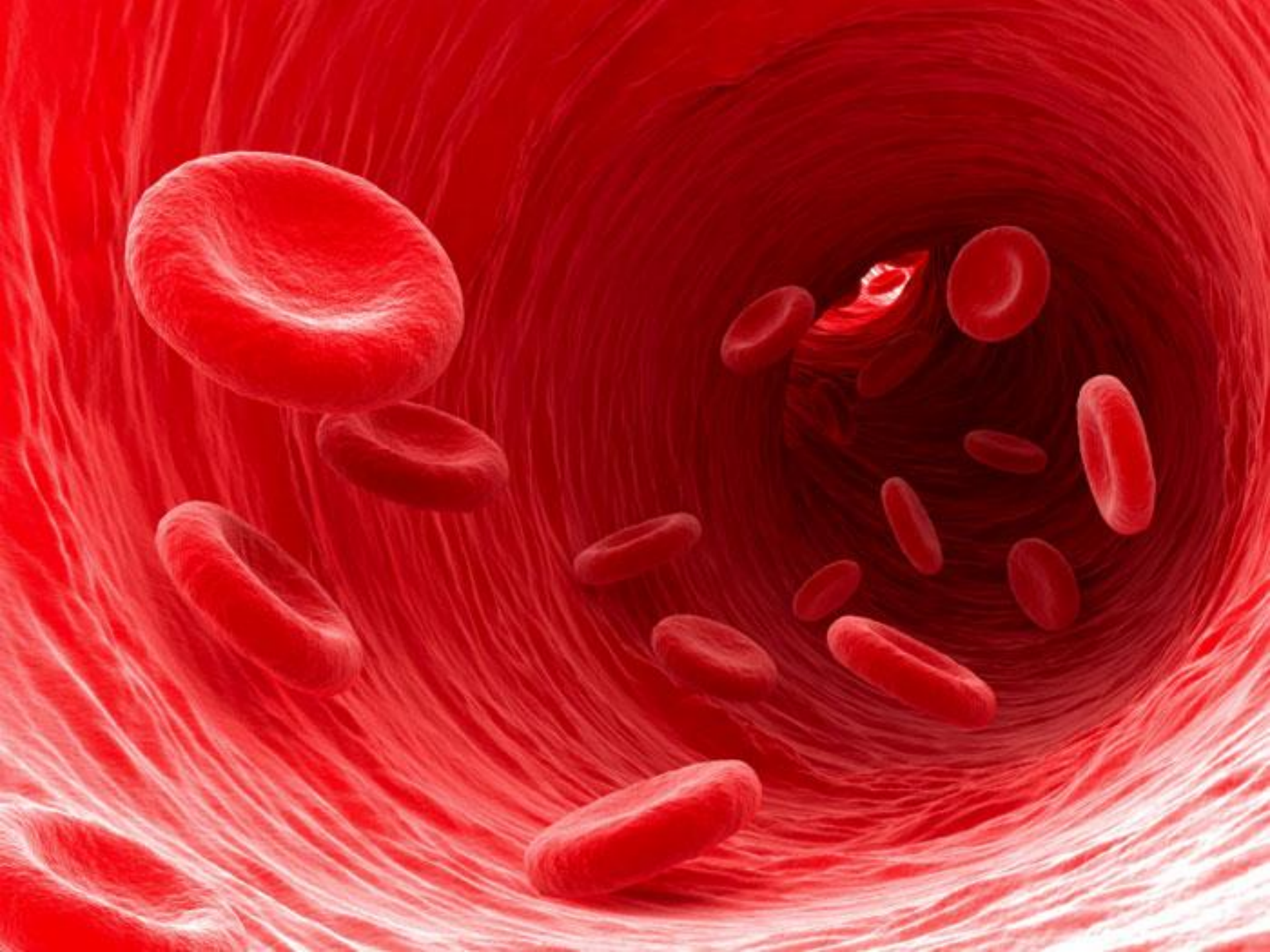


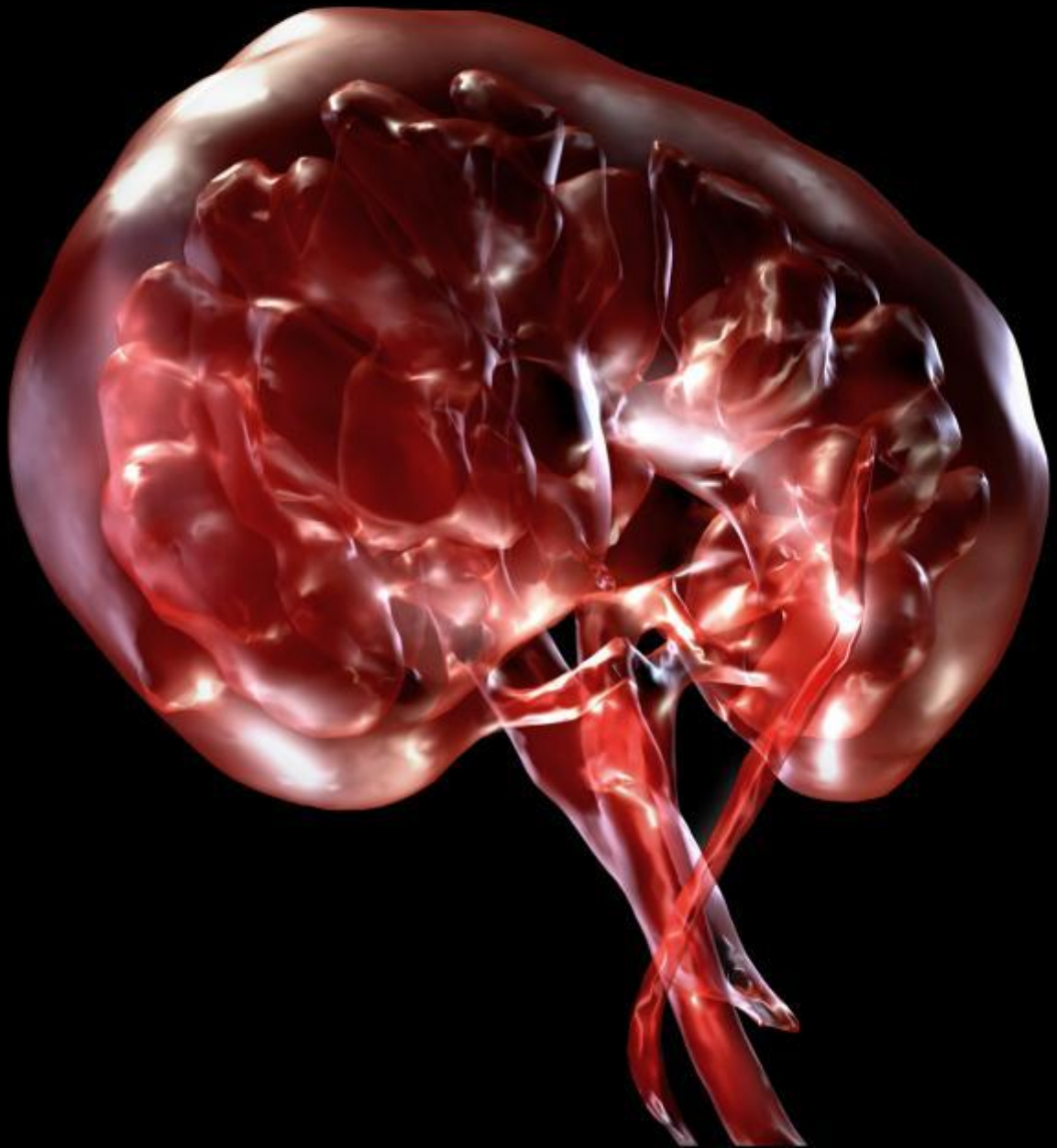


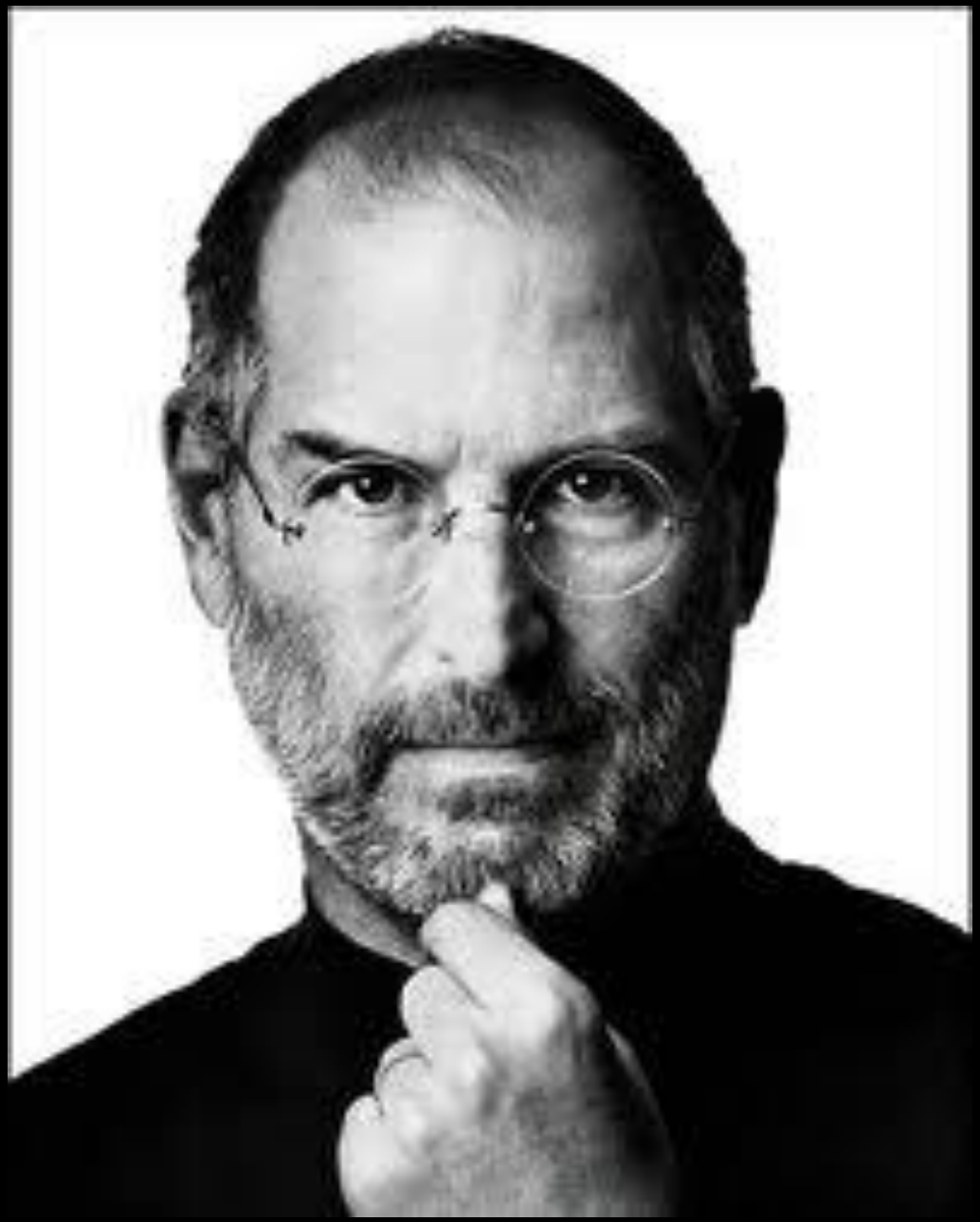
Can Vascular Access Providers be Successful Innovators?












THE ONES
WHO ARE
CRAZY
ENOUGH
TO THINK THAT
THEY CAN
CHANGE
THE WORLD,
ARE THE
ONES
WHO DO
Steve Jobs

