



oath endovascular

We fill therapeutic gaps by combining
new technologies with regenerative therapies
to provide novel minimally-invasive treatments.

Problem

Peripheral artery disease is estimated to affect **202 million** people worldwide.

Patients with CLI face a high **risk of limb loss**—between 10% to 40% at 1 year, and at 5 years, the **mortality rate reaches 50%**.

Most common cause of CLI is BTK disease where there are no optimal endovascular treatments and this is an

Solution:

The Oath team has developed a bioabsorbable stent which can be targeted by regenerative therapies.

Our most recent milestone was successful preclinical studies in CAD culminating with \$6M in support from European Grant funding.

We are seeking funding to rerun preclinical studies targeting CLI as the space is more attractive to enter.

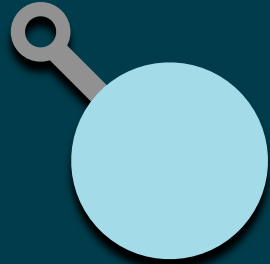
Dissolvable Platform with Magnetic Targeting

Secured Patents:

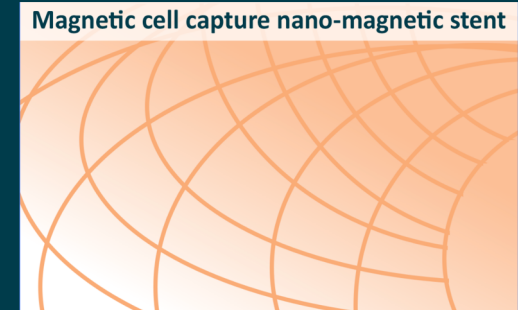
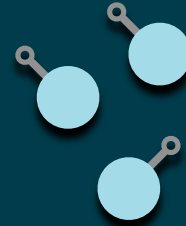
PCT/US2016/025328 Title: FERROMAGNETIC PARTICLES BOUND TO POLYMERIC IMPLANTS

PCT/US2015/023880 Title: IRON PLATNIUM PARTICLES FOR ADHERENCE OF BIOLOGICS ON MEDICAL IMPLANTS

1



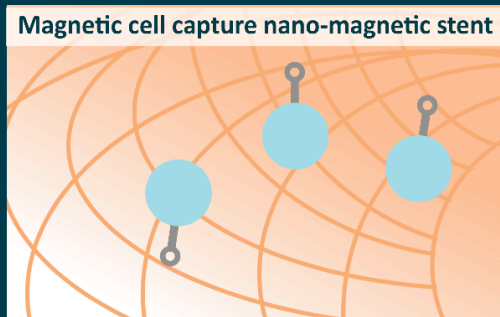
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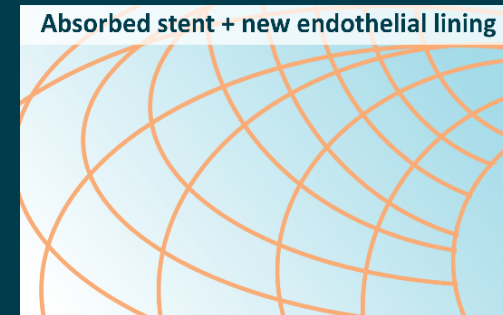
Adult progenitor cells from the patient's own bone marrow are tagged with an ultra-small iron-oxide nanoparticle using a commercially available cell selection system. Our team has successfully practiced this technique across 1,000 patients.

The stent is placed in the artery using the normal technique with a delivery balloon. We then infuse the tagged progenitor cells into the artery containing the magnetized stent via a standard catheter.

3



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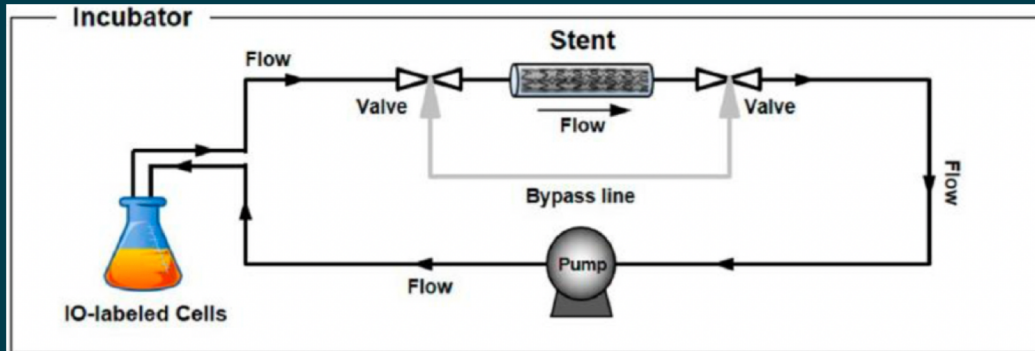


The iron tagged progenitor cells are attracted to the magnetised stent where they promote rapid endothelialisation. Cells that are not captured pass to the distal vascular bed where they promote an increase in blood supply.

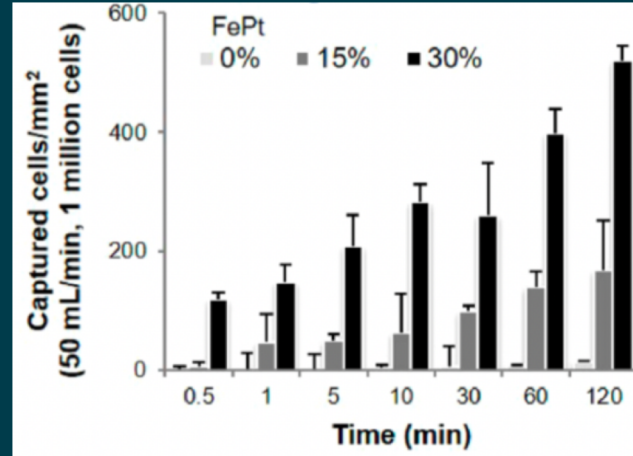
The bioabsorbable stent then dissolves leaving the new endothelial lining to regenerate the artery itself and to give protective agents to the artery and organs down stream.

Completed Bioreactor Studies

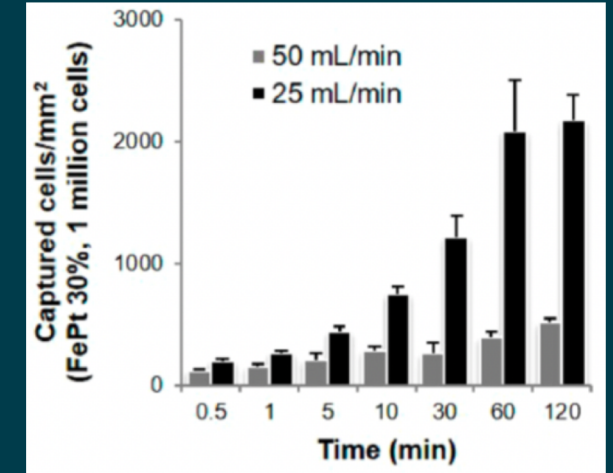
Experimental Setup



Seeding Concentration



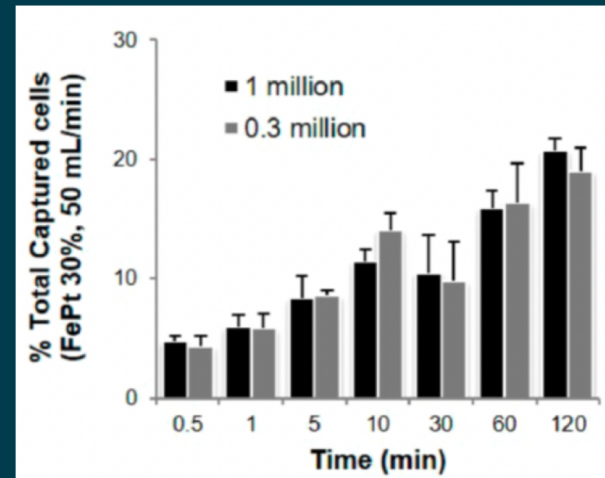
Flow Rate



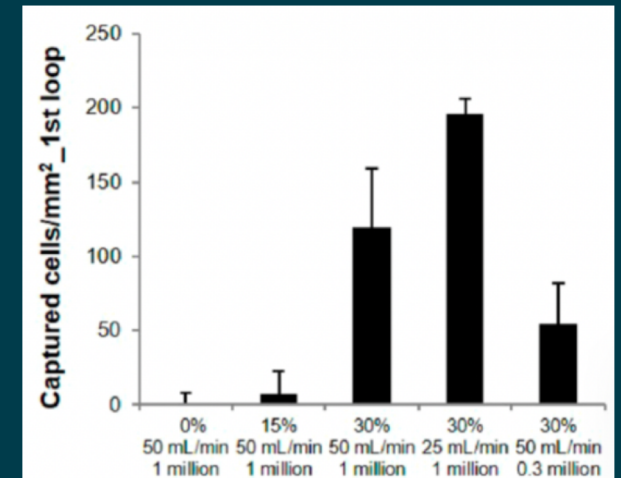
Nanomagnetic Cell Capture

Time	⁶⁴ Mag-polymer-coated stent	polymer-coated stent
3 h		
5 h		
8 h		
24 h		
48 h		
72 h		
96 h		

Number of Cells Infused

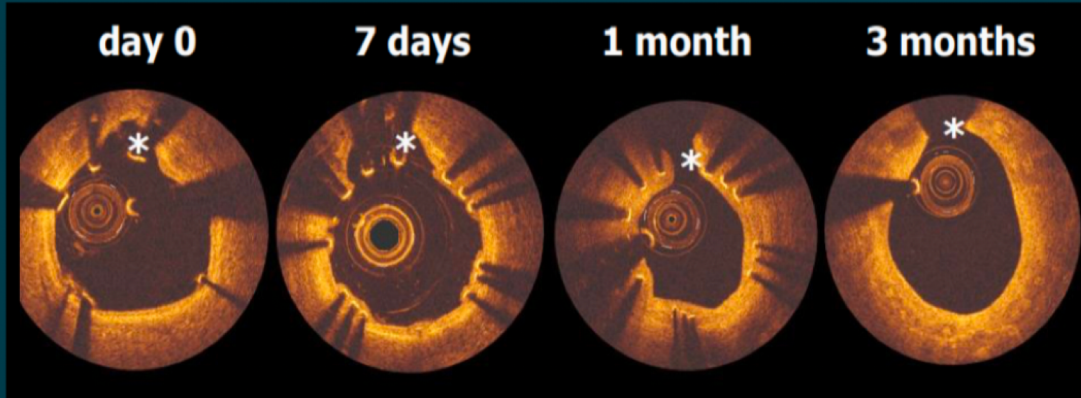


Retained Cells on First Pass



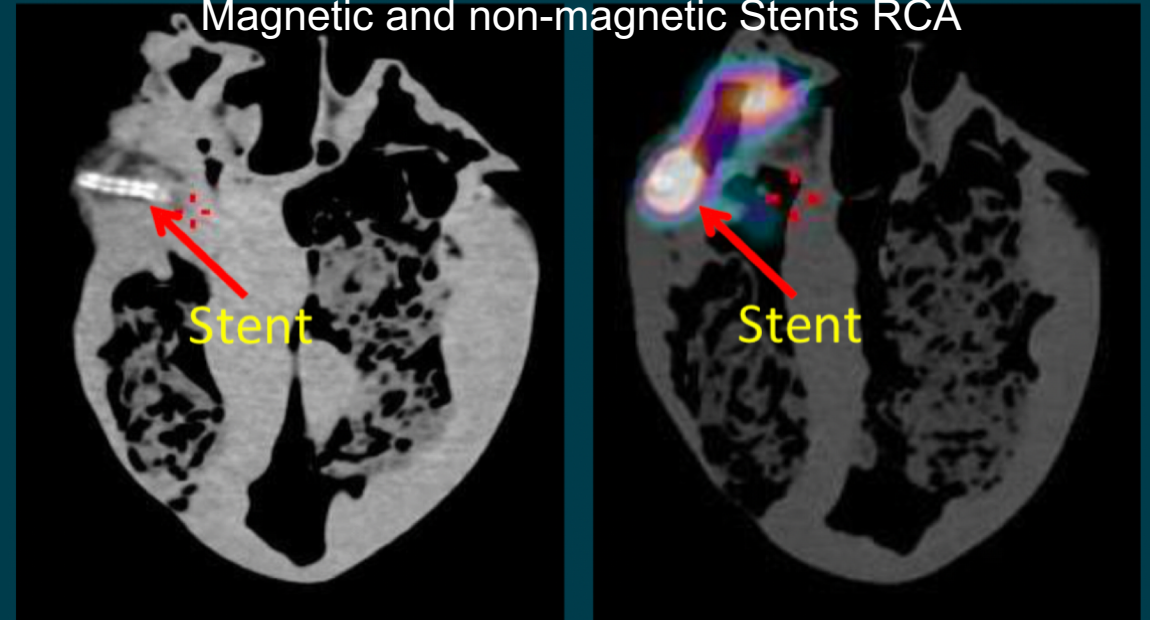
Completed Preclinical Studies

in vivo OCT



Visualization of Stent and Cell Capture
RCA injection of 2.6×10^6 In-111 (0.42 mCi) labeled CD34+ cells

Magnetic and non-magnetic Stents RCA



ex vivo
CT

ex vivo
SPECT/CT

**Magnetic
Stent**



Global Market Size by 2023

FIRST INDICATION

Critical Limb Ischemia

Procedures per year: 900,000

Average stent selling price: \$1,181

Growth Rate Next 5 Years: 6.5%

Global Market Value: \$2.23 Billion

- In the US, between 150,000 and 300,000 cases are diagnosed each year.

Cardiac Stent Market

Procedures per year: 1,800,000

Average stent selling price: \$1,419

Growth Rate Next 5 Years: 8.7%

Global Market Value: \$7.75 Billion

- CAD market set to decline as recent data at AHA suggests no clinical benefit over other therapies.

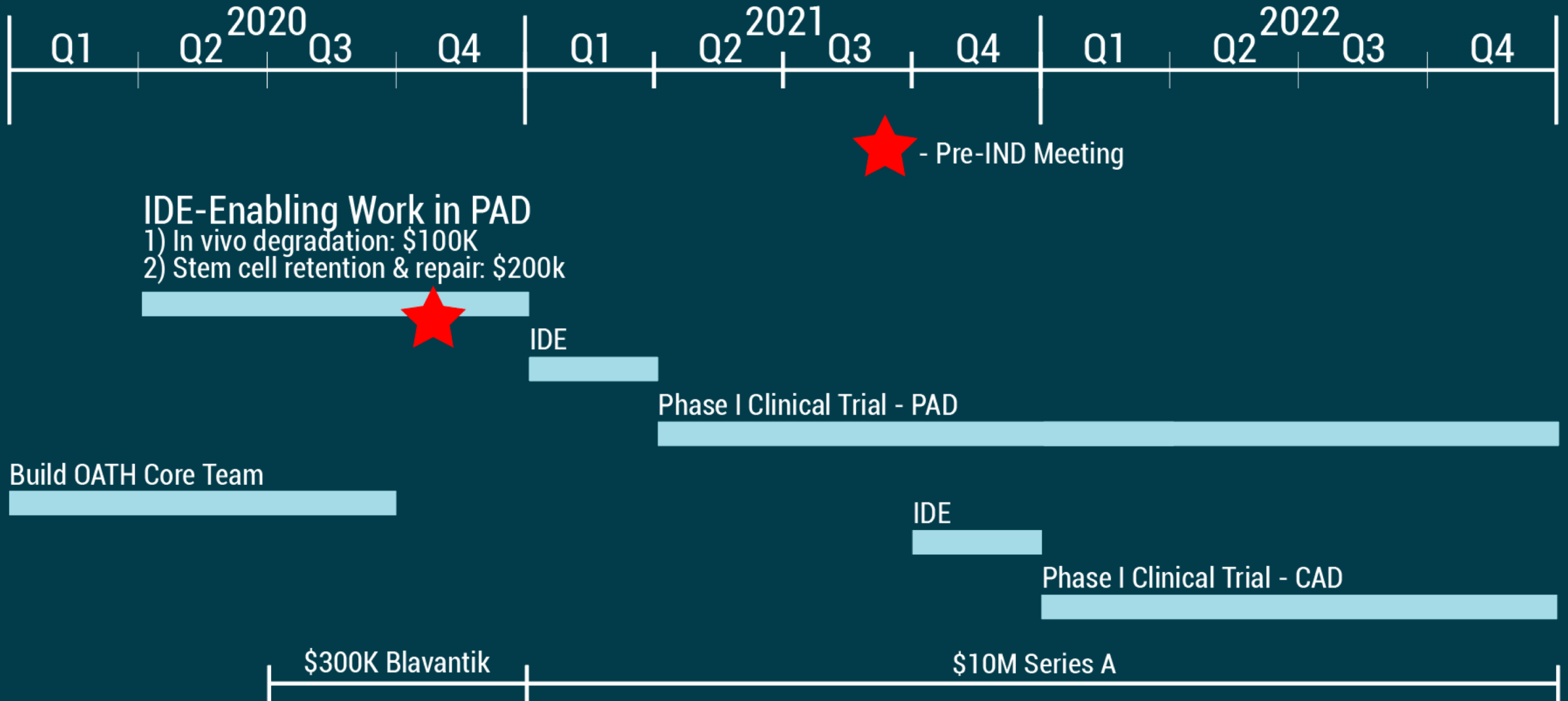
Potential future indications may include:

Regenerative medicine therapies of the heart or other indications, intracranial stent/therapies, other targeted therapies.

Competitor Landscape

Characteristics	OATH NUSTENT	Boston Scientific + REVA ReZolve	Magnamarus Biotronik	OrbusNeich COMBO Stent
Stent Design	Open cell FrameWork®	Slide and spiral lock	6-crown 2-link zig-zag	Dual helix
Strut Design / Materials	Mg Core PLLA enclosure + FePt	p-tyrosine derived polycarbonate	Mg PLLA coating	Stainless steel 316L Sirolimus + CD34 Antibody Coating
Duration Radial Support	1 month	3 – 6 months	~ 3 months	Infinite
Resorption Time	3 months	24 – 48 months	12 months+	None
Current Status	FIM planned in 2021	Coronary target; FIM in 2013; Positive results presented in 2018	In Clinical Trials: 30K of 55K patients enrolled; CE in process	Multiple clinical trials CE Mark approved
Biodegradable	YES	YES	YES	NO
Imageable	YES	YES	YES	YES
Magnetized / Targetable	YES	NO	NO	NO
Regenerative Properties	YES	NO	NO	YES

Timeline



Oath Endovascular



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Physician Scientist



Tarek Fahmy
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Carlos Mena
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