Investment Proposal

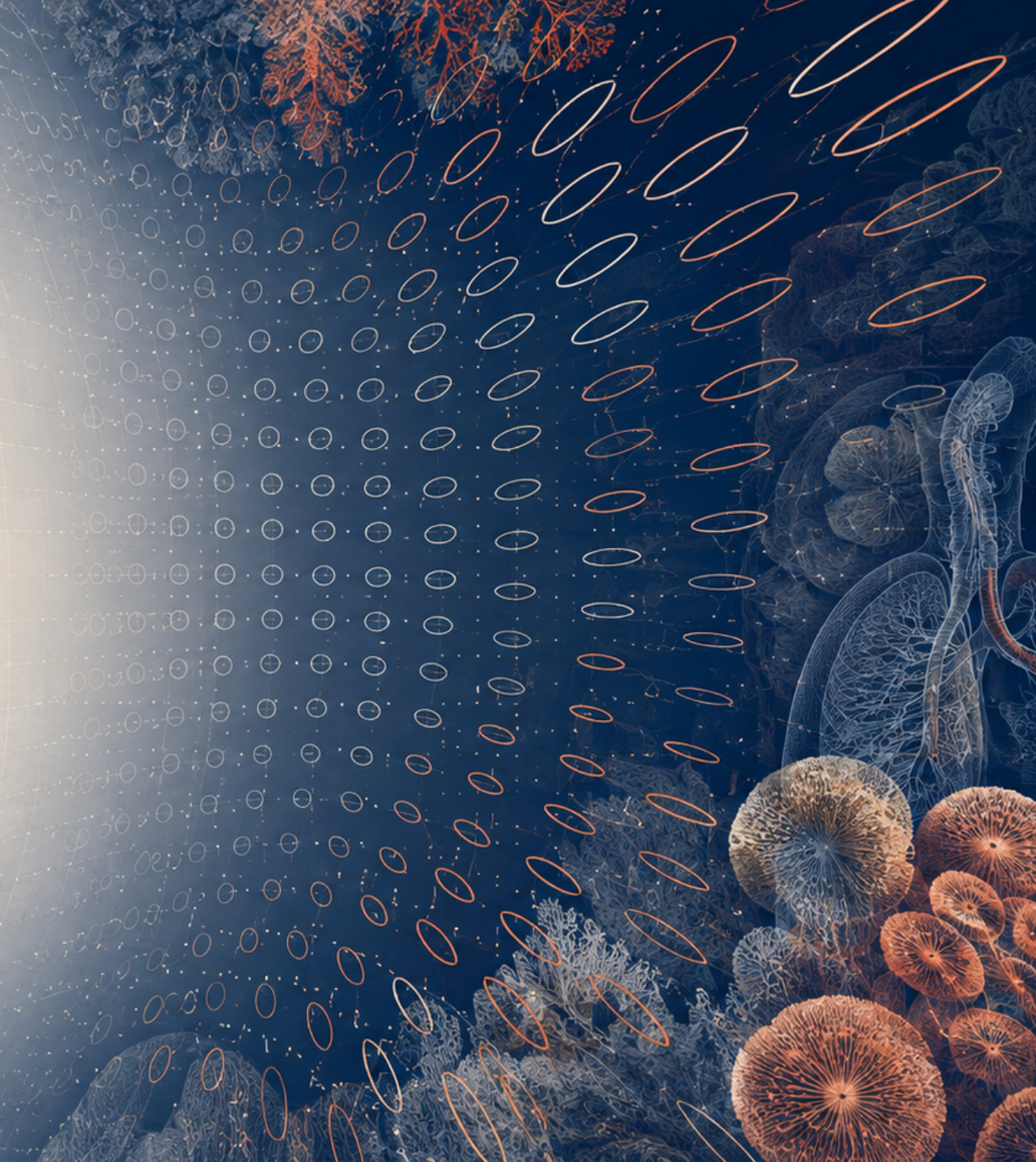
Coral Castle Laboratories

Improving medical imaging, one machine at a time

Cancer is an imaging problem

In **2025**, the American Cancer Society estimated **2 million new cancer diagnoses** in the United States–about **5,600 diagnoses per day**

Early detection and precise treatment depend on **image quality**



Blurry images hide information

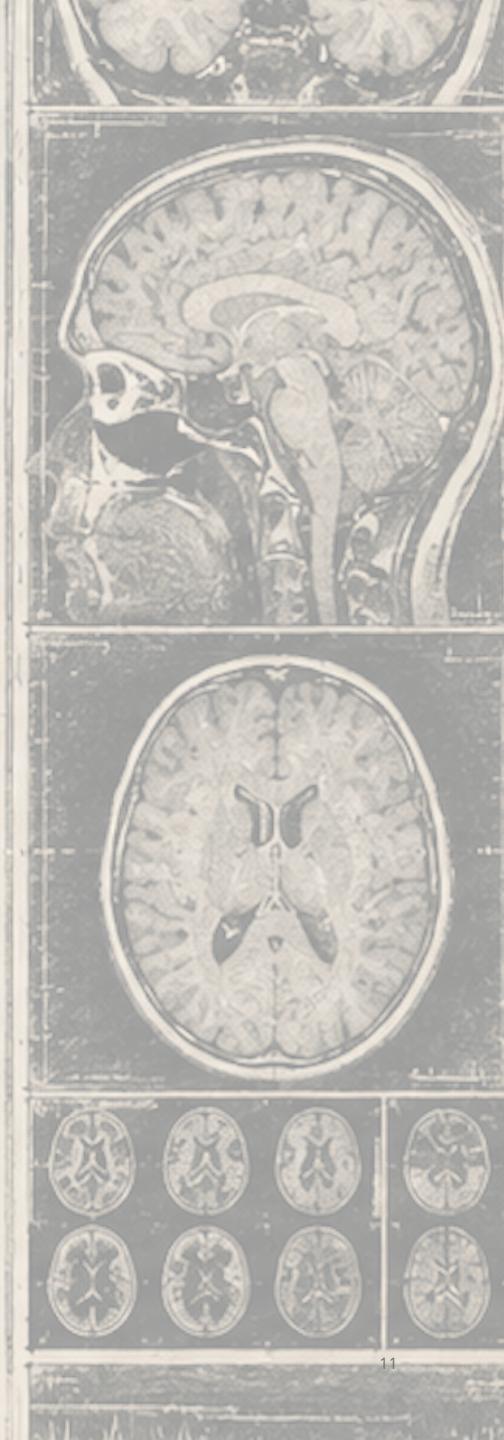
Every imaging system has **limitations** which distort reality.

Resolution can be the difference between early detection and detection at an advanced stage

Our Breakthrough: Measure the distortion

We use a **known** calibration object to understand how the machine is deforming the image.

By understanding the machine we can achieve a **better image** by using **mathematical** methods.



Our Calibration Widget

We use a **known** object to tune the image.

By seeing how our object is distorted, we can measure how the imaging system blurs and stretches the image at every point.

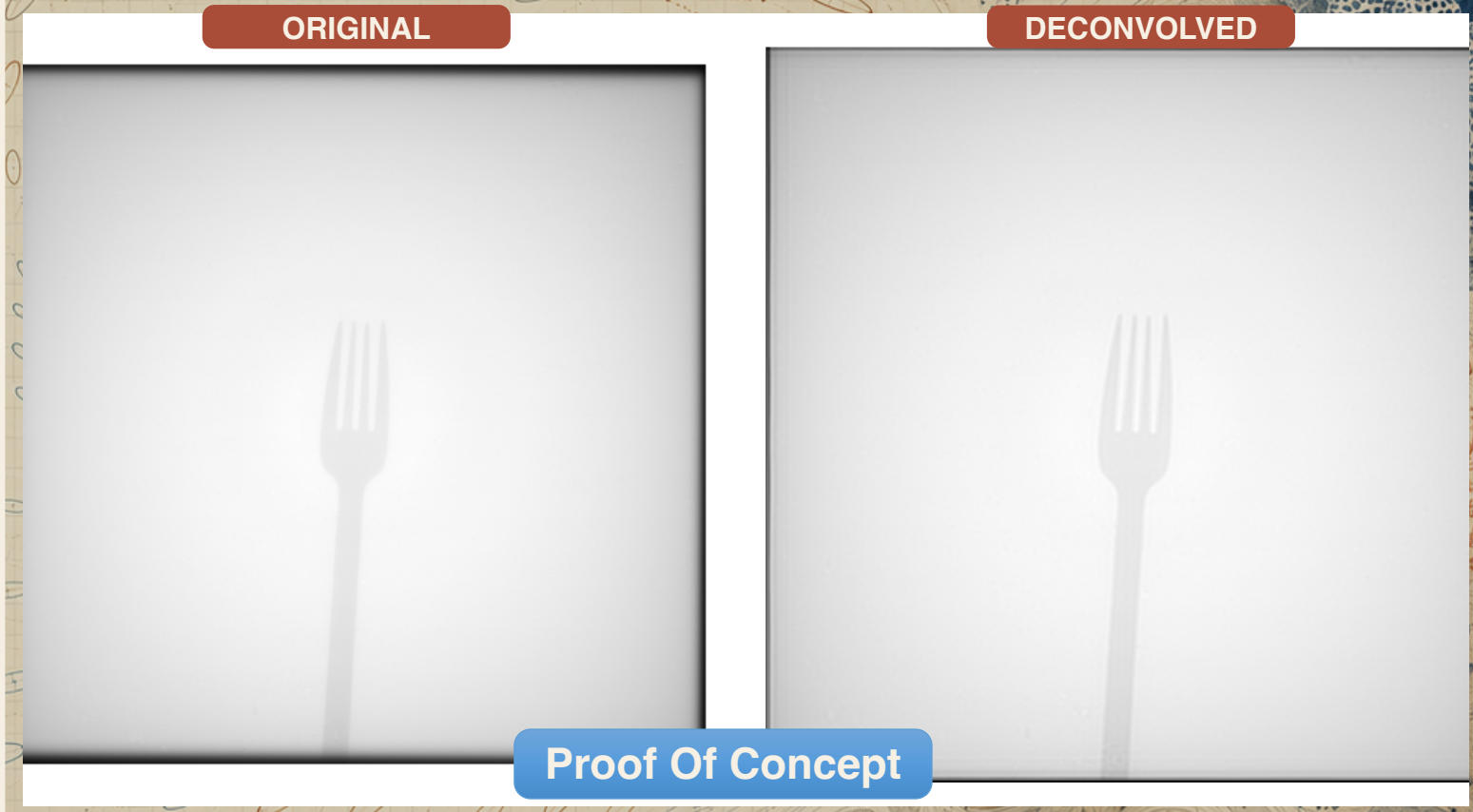
Our widget: 300 metal spheres

Proof of concept

Image improvement on linear accelerator (LINAC) images – **not AI**, not hallucination, not data-dependent.

Sharper edges

7x to 72x Targeted Correction



Smearlets: A Layer to Helps Medical Machines See Better

The physical widget and software adapt to **each machine**, but the core product remains the same:

Smearlets is a calibration kit and software platform that measures how a machine distorts an image and uses those physical measurements to naturally improve the machine's output.

WHY CURRENT METHODS FALL SHORT

Competitive Landscape

AI Enhancement

May generalize and hallucinate features.

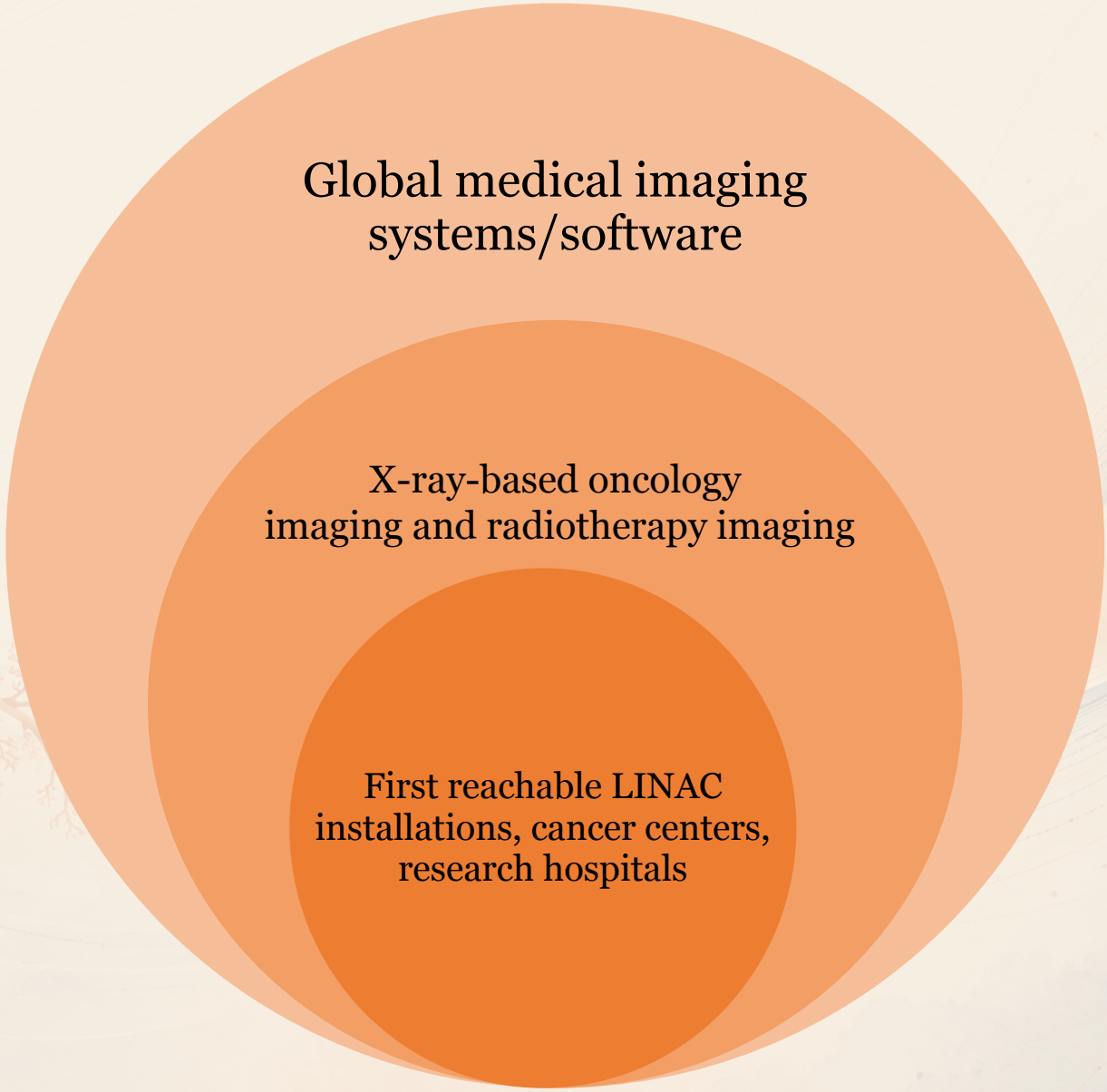
Global de-blurring

Assumes the noise is uniform through the image

Hardware Changes

Inherently Expensive

TAM/SAM/SOM


Global medical imaging systems/software
X-ray-based oncology imaging and radiotherapy imaging
First reachable LINAC installations, cancer centers, research hospitals

Our team

Zachary Mullaghy, CEO

Medial Physics MSc. whose work focuses on developing novel mathematical methods for medical imaging

Samantha Goldwasser, COO

Astrophysics MSc. specializing in spectral analysis methods and software development

The Ask

Coral Castle Laboratories is raising **$300,000** to validate across machines and develop a platform and software package for radiation machines (LINAC)

Help us turn a successful LINAC demonstration into a functional medical-imaging platform.

A correction layer for imaging

Local blur is measurable.
We give it coordinates.

Multi-machine reach is our goal