



# FOCUSED ULTRASOUND FOUNDATION

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*Updated 5/1/24*



# Focused Ultrasound

*“The most powerful sound  
you will never hear, but a sound  
that could one day save your life.”*

— Neal Kassell, MD  
Founder and Chairman, Focused Ultrasound Foundation



# Alternative or Complement to Traditional Therapy



Surgery



Radiation



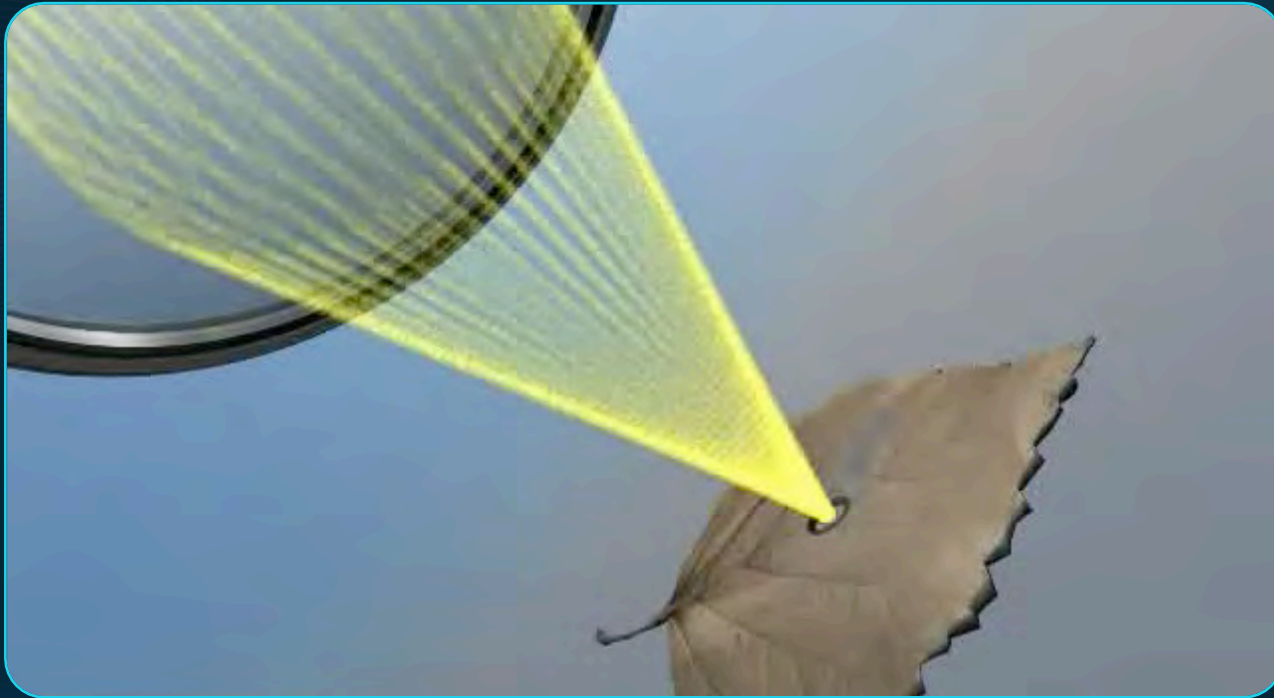
Drug Delivery



Immunotherapy

# How does it work?

Multiple Intersecting Beams of Ultrasound



Focused on target deep in the body

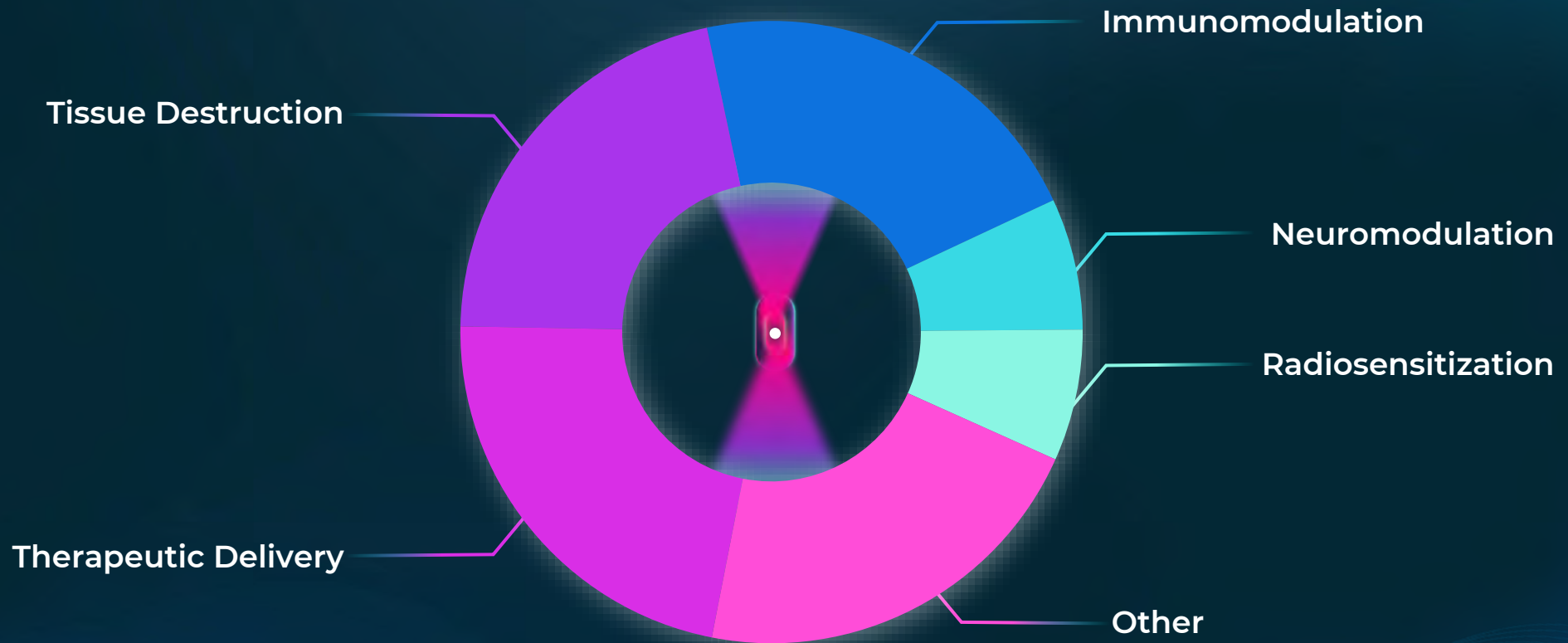
High degree of precision and accuracy

Sparing adjacent tissue

Profound effect at point of convergence



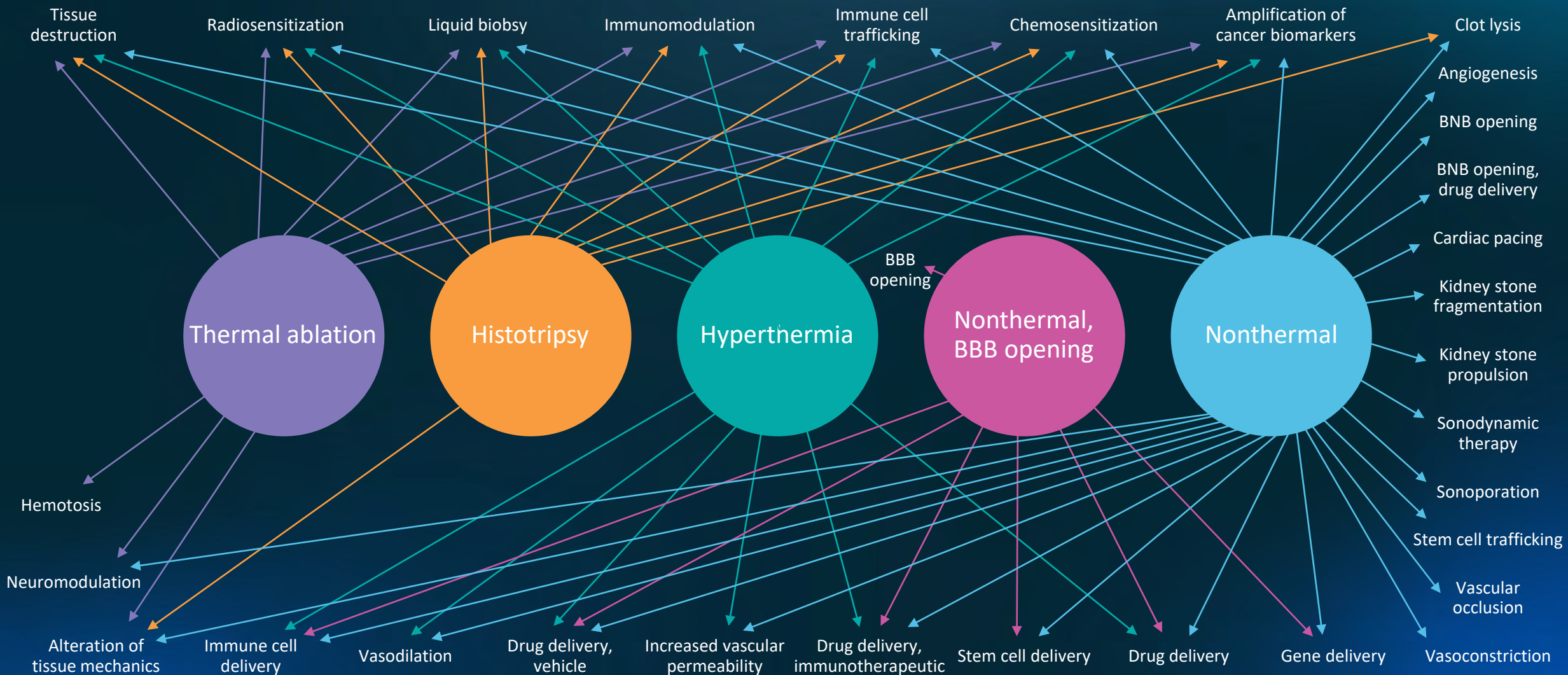
# 30 Effects at the Focal Point



Multiple mechanisms of action = Multiple medical disorders

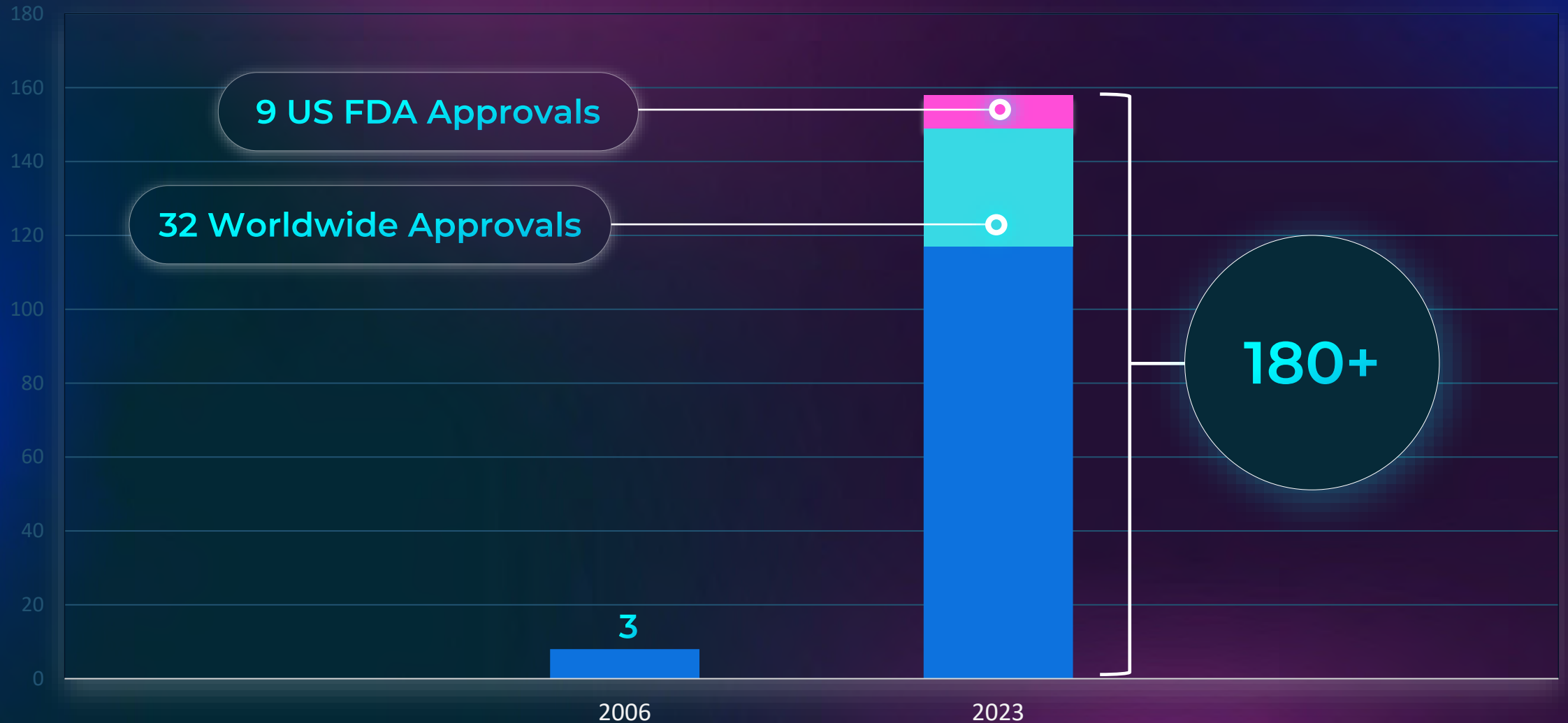
# Mechanisms of Action

## Ultrasound Applications and Biological Effects



# Global Development Landscape

Clinical Indications





# 32 Indications Approved Worldwide

## Cardiovascular

- Varicose veins

## Endocrine

- Thyroid nodules

## Gastrointestinal

- Liver metastases
- Liver tumors
- Pancreatic tumors

## Musculoskeletal

- Arthritis, facetogenic
- Bone cancer
- Bone metastases
- Bone tumors, benign
- Desmoid tumors
- Multiple myeloma
- Osteoid osteoma
- Soft tissue cancer
- Soft tissue tumors, benign

## Neurological

- Depression
- Essential tremor
- Neuropathic pain
- OCD
- Parkinson's dyskinesia
- Parkinson's tremor

## Ophthalmological

- Glaucoma

## Pulmonary

- Rhinitis

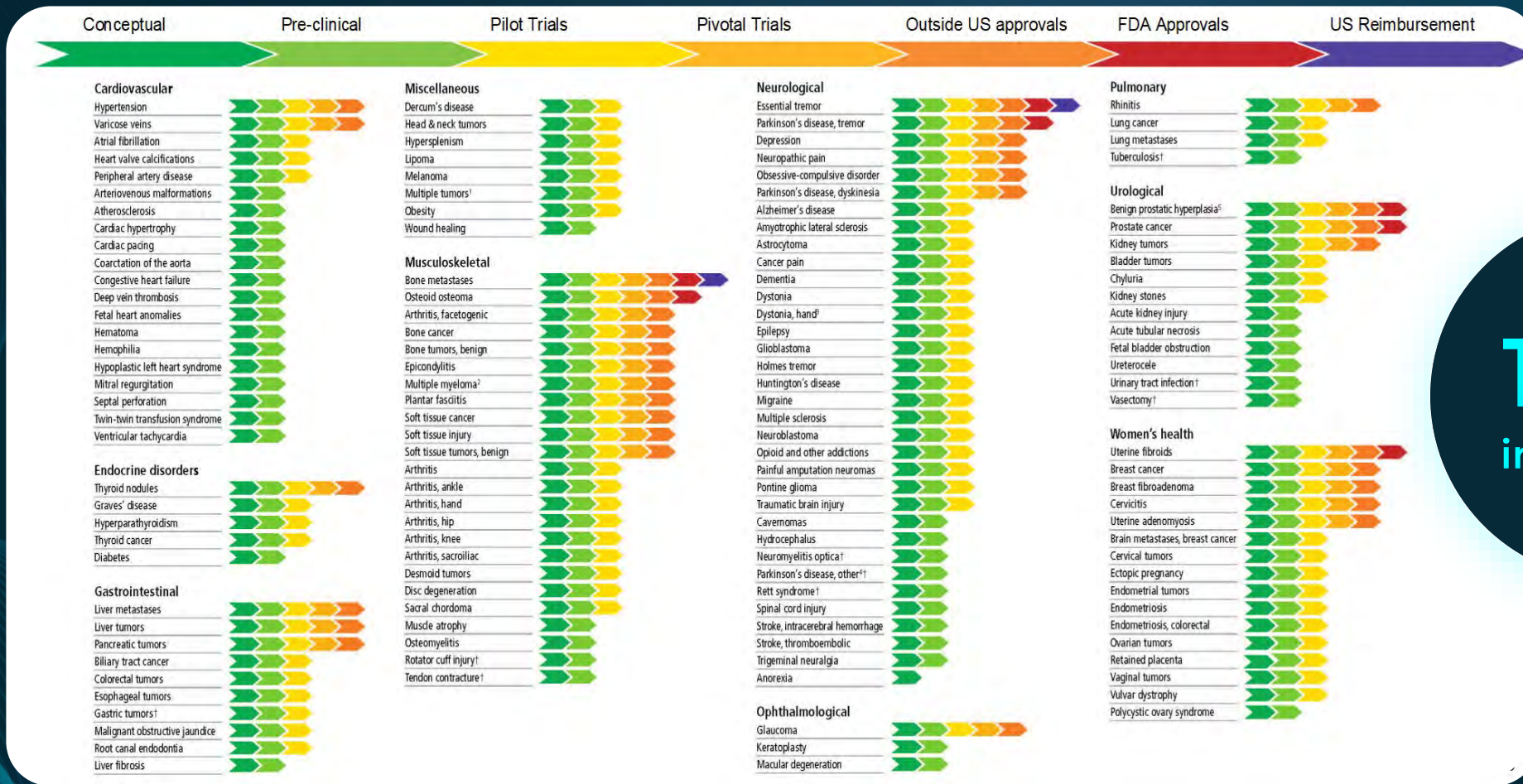
## Urological

- BPH
- Kidney tumors
- Prostate cancer

## Women's health

- Breast tumors, benign
- Breast tumors, malignant
- Cervicitis
- Hyperplasia of the vulva
- Lichen sclerosus
- Uterine adenomyosis
- Uterine fibroids





180+ indications

# Global Development Landscape

# Types of Research Sites by Region

	Total	North America	Europe	Asia	South America	Oceania	Africa
Clinical research	<b>293</b>	85	104	99	-	5	-
Preclinical research	<b>152</b>	69	41	39	-	3	-
Mechanisms of action research	<b>180</b>	80	42	55	-	3	-
Technical research	<b>151</b>	61	49	39	-	2	-





# 2022 Commercial Treatment Sites

# 932

Commercial Treatment Sites

<b>405</b>	<b>290</b>	<b>219</b>	<b>7</b>	<b>7</b>	<b>7</b>
<b>Asia</b>	<b>Europe</b>	<b>North America</b>	<b>South America</b>	<b>Oceania</b>	<b>Africa</b>
25% Annual Growth from 2013–2022	4% Annual Growth from 2013–2022	12% Annual Growth from 2013–2022	4% Annual Growth from 2013–2022	19% Annual Growth from 2013–2022	15% Annual Growth from 2013–2022



# Focused Ultrasound Foundation

- Unique medical research, education, advocacy organization
- Founded 2006, tax exempt
- Entrepreneurial, high impact, market driven, action and results oriented
- Top 10 Medical Research Organization
- Social entrepreneurship, venture philanthropy model
- Charlottesville, VA based: global influence – Hong Kong and UK affiliates



FOCUSED ULTRASOUND  
HONG KONG FOUNDATION  
香港聚焦超聲波基金會



FOCUSED  
ULTRASOUND  
FOUNDATION



UK FOCUSED ULTRASOUND  
FOUNDATION

# Focused Ultrasound Foundation: The Catalyst



To accelerate the development and widespread adoption of **focused ultrasound** as a global standard of care

- Fund groundbreaking research
- Reduce time from bench to bedside through scientific breakthroughs in preclinical studies and clinical trials all over the world
- Strategically focused on debilitating neurodegenerative diseases, aggressive cancers, and cancer immunotherapy

# We fund based on FUSF research priorities



Technology: Only fund projects that involve **non-invasive image-guided focused ultrasound to treat disease**.



Research stage: We prioritize **preclinical translational research studies and clinical trials**.



Mechanism of action: We prioritize research on **immunomodulation, neuromodulation, gene therapy, drug delivery, and sonodynamic therapy**.



Clinical indication: We prioritize funding for research in the fields of **oncology and neurodegenerative disease**.



# The Brain

The vanguard target for **focused ultrasound** therapy

## The Foundation

Has played a crucial role in accelerating the use of focused ultrasound to treat:

**Alzheimer's Disease**

**Parkinson's Disease**

**Glioblastoma (GBM)**

**Essential Tremor**

**Depression, OCD**







# Cancer Immunotherapy

The most promising development in **cancer treatment** In the last few decades.

## **Focused Ultrasound**

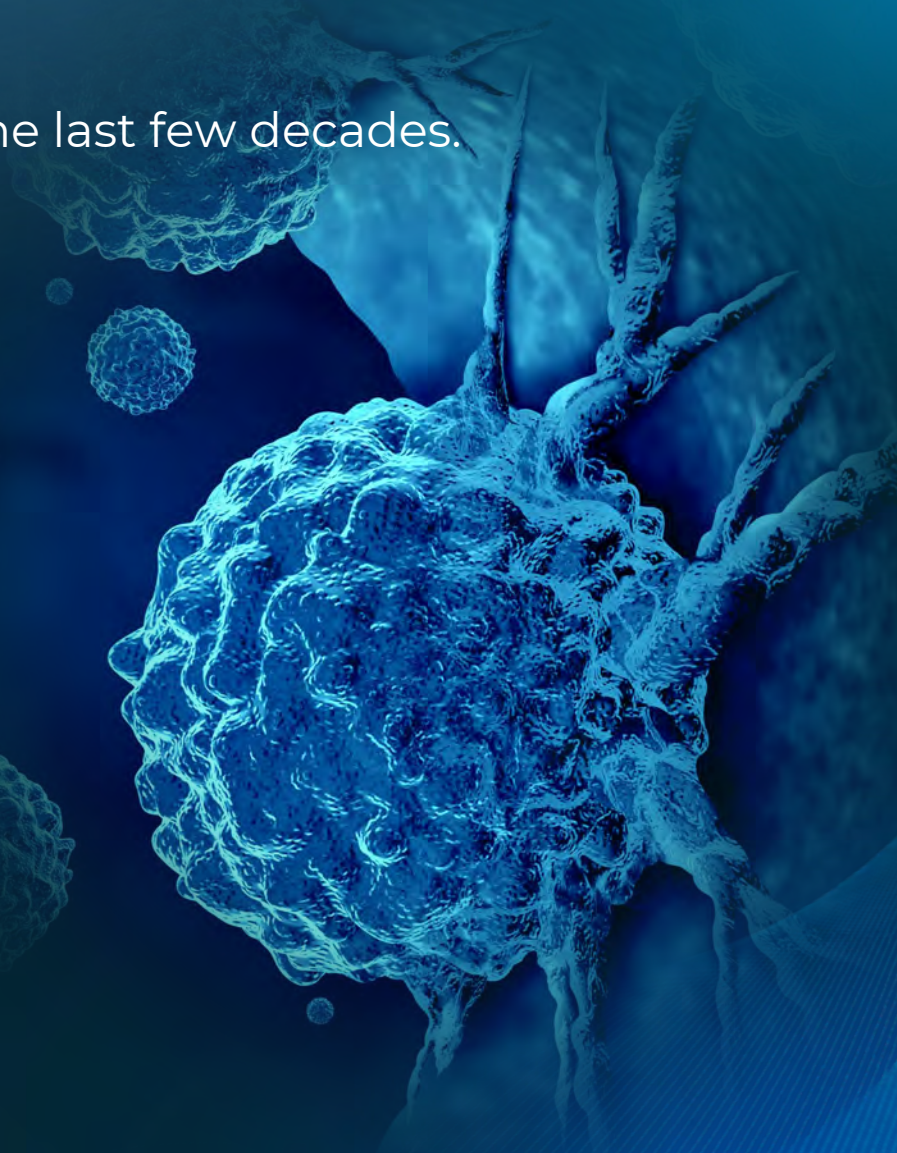
Has the potential to transform treatment and outcomes for aggressive, hard-to-treat cancers, including:

**Pancreatic Cancer**

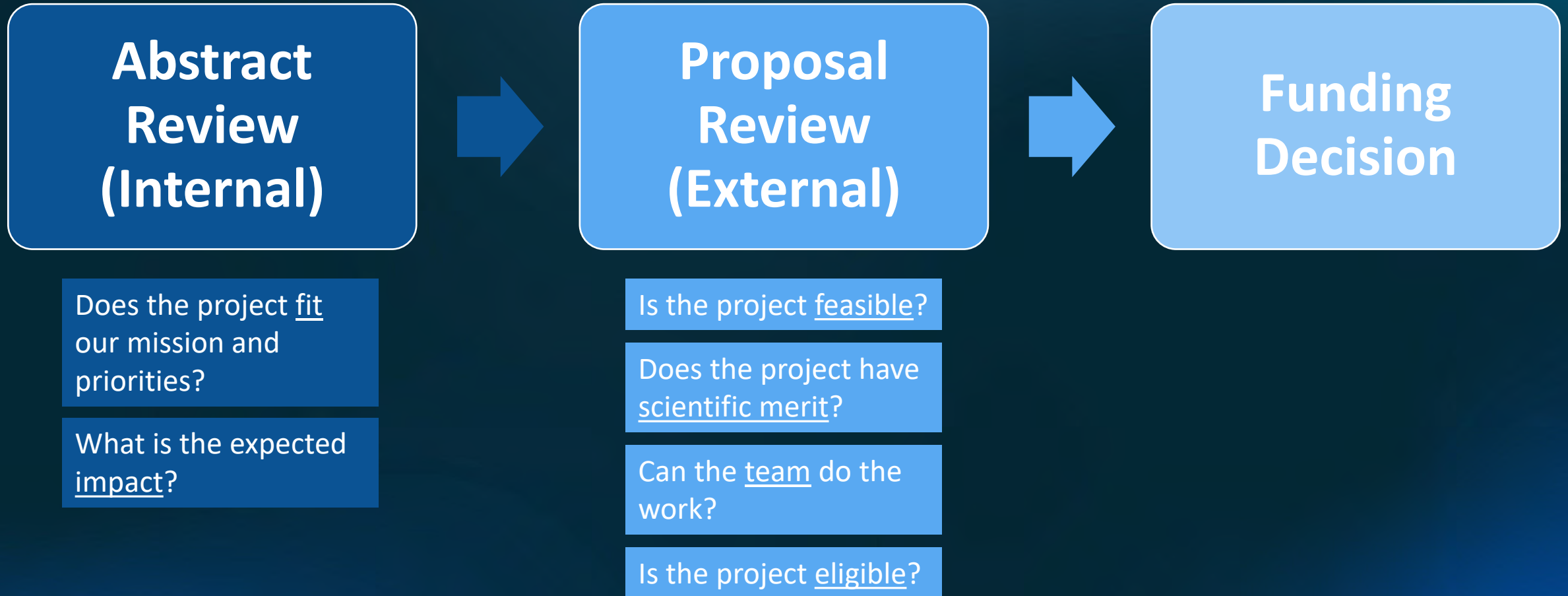
**Metastatic Breast Cancer**

**Glioblastoma (GBM)**

**Diffuse Intrinsic Pontine Glioma (DIPG)**



# Proposal Evaluation Process





Patient

Industry

Venture Capital,  
Private Equity

Payers;  
Public and  
private

Patient  
Advocacy  
Organizations

Private  
Philanthropy

Treatment  
Facilities



# FOCUSED ULTRASOUND FOUNDATION



Academic  
Research Sites

Disease Specific  
Foundations

Media

Medical  
Societies

Physicians,  
Numerous  
specialties



# Centers of Excellence



## Luminary Sites

- Showcase technology
- Hub for collaboration

## Excellence

- Patient care
- Research
- Education

## Multidisciplinary, Interdepartmental

# Partners







# FOCUSED ULTRASOUND FOUNDATION

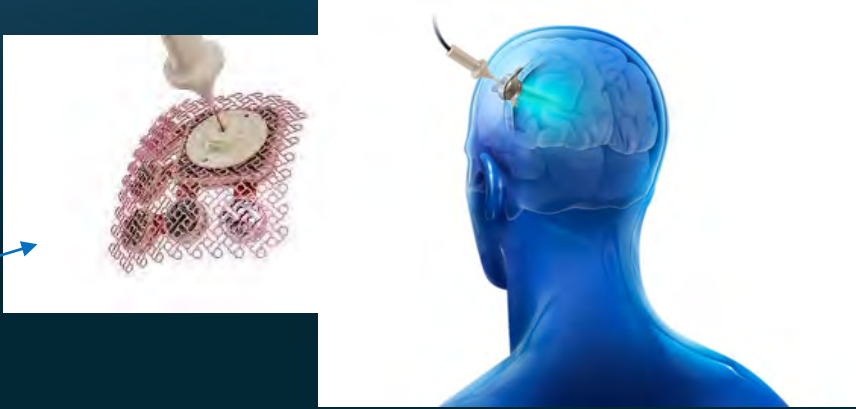
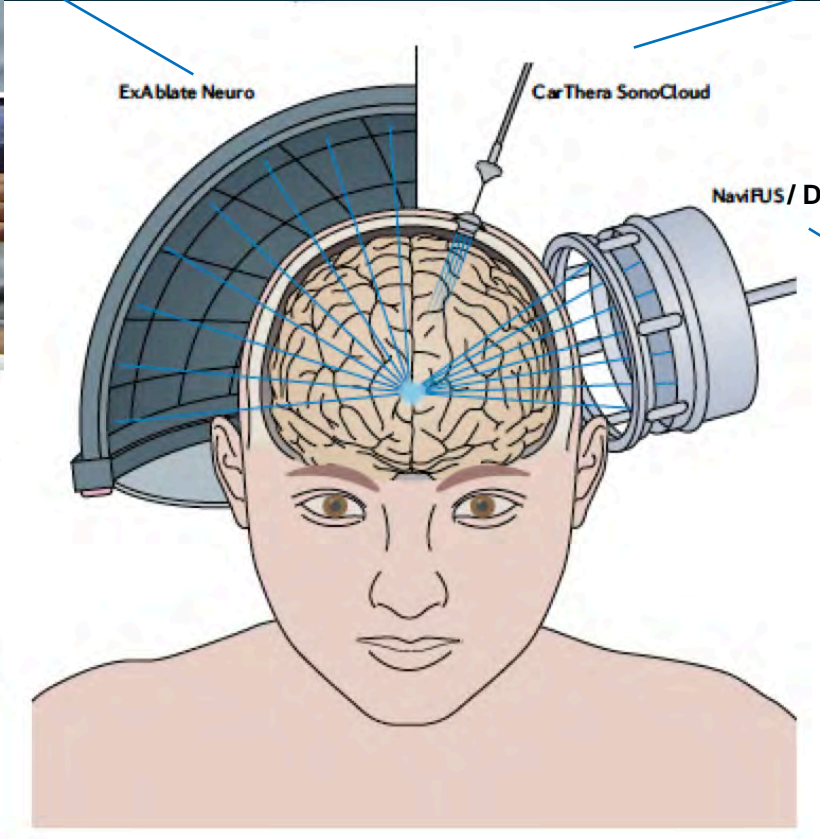
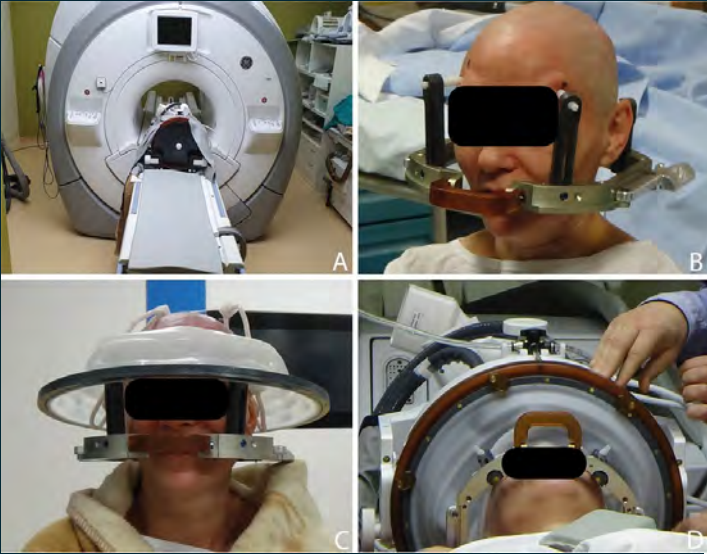
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# Clinical focused ultrasound devices





# Orchestrate the flow of information

