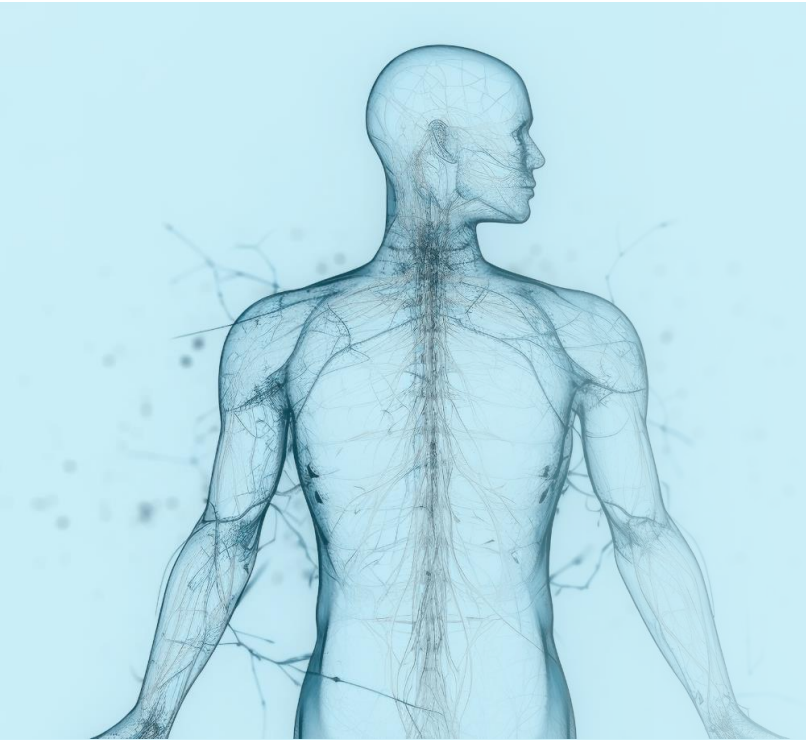
Pulse Biosciences®

Investor Presentation

April 2024

Forward Looking Statements

All statements in this presentation that are not historical are forward-looking statements, including, among other things, statements relating to the effectiveness of the Company's nsPFA technology and CellFX System to non-thermally clear cells while sparing adjacent non-cellular tissue, statements concerning the Company's expected product development efforts, statements concerning the Company's future regulatory strategies and possible government clearances and approvals, statements concerning the Company's future commercial plans, such as the possible launch of two revenue-generating nsPFA products in 2024, statements concerning customer adoption and future use of the CellFX System to address a range of conditions such as atrial fibrillation and benign thyroid nodules, statements about the Company's future financing opportunities and operating expenses, and Pulse Biosciences' expectations, whether stated or implied, regarding whether the Company's nsPFA technology will become a disruptive treatment option for treating cardiac arrhythmias, benign thyroid nodules or any other medical condition and whether future clinical studies will show the CellFX System is safe and effective to treat any medical condition, and other future events. These statements are not historical facts but rather are based on the Company's current expectations, estimates, and projections regarding its business, operations and other similar or related factors. Words such as "may," "will," "could," "would," "should," "anticipate," "predict," "potential," "continue," "expects," "intends," "plans," "projects," "believes," "estimates," and other similar or related expressions are used to identify these forward-looking statements, although not all forward-looking statements contain these words. You should not place undue reliance on forward-looking statements because they involve known and unknown risks, uncertainties, and assumptions that are difficult or impossible to predict and, in some cases, beyond Pulse Biosciences' control. Actual results may differ materially from those in the forward-looking statements as a result of a number of factors, including those described in the Company's filings with the U.S. Securities and Exchange Commission. Pulse Biosciences undertakes no obligation to revise or update information in this presentation to reflect events or circumstances in the future, even if new information becomes available.



Powering the next generation in bioelectric medicine with **Nanosecond Pulsed Field Ablation** technology.

Results In A Billionth Of A Second

Pulse Biosciences®

Proven Leadership Team

Kevin Danahy
Chief Executive Officer & President

Medtronic · Johnson & Johnson · ZIMMER BIOMET · INTUITIVE

Darrin Uecker
Chief Technology Officer & Director

gynesonics · computermotion

Mitch Levinson
Chief Strategy Officer

thermage · coolsculpting by ZELTIQ · NELLCOR

Renowned Scientific Expertise

Dr. Gan Dunnington
Chief Medical Officer
Adventist Health

Dr. Niv Ad
Chief Science Officer, Cardiac Surgery
Adventist HealthCare White Oak Medical Center

Established Board of Outside Directors

Robert (Bob) W. Duggan
Executive Chairman of the Board of Directors

Richard van den Broek
Director

Manmeet S. Soni
Director

Mahkam "Maky" Zanganeh, DDS
Director

Shelley D. Spray
Director

Pulse Biosciences®

Proprietary Designed and Engineered

Powering the next generation in bioelectric medicine with **Nanosecond Pulsed Field Ablation (nsPFA)** Technology

Proprietary Technology
Only company bringing novel Nanosecond Pulsed Field Ablation (nsPFA) technology to the health care of patients

Novel AF nsPFA Devices
nsPFA enabled applicators deliver highly differentiated value in the treatment of AF

Robust Patent Portfolio
Surrounding the technology, devices, and use of nsPFA

148
issued patents globally owned & licensed

+103
Patent Pending Applications

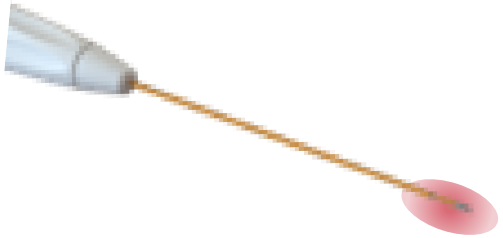
Broad Medical Device Expertise
Development expertise across many disciplines

Pulse Biosciences®

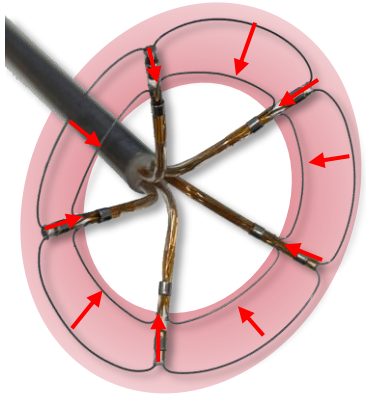
Optimized Procedures Require Both Design and Energy

nsPFA Energy Higher Amplitudes with Less Energy

CellFX nsPFA Optimized Designs Leverage nsPFA Energy



CellFX nsPFA Percutaneous Electrode



CellFX nsPFA 360 Catheter

nsPFA + nsPFA designs = Results only achievable by CellFX nsPFA Technology

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CellFX nsPFA Platform Unlocks >$16.8B In Current and Potential Markets

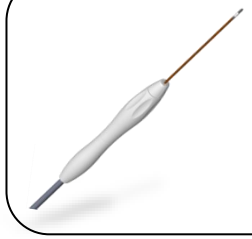
CellFX nsPFA Platform

Electrophysiology Application

→ Current Market: **>$8B** Growing at 10-15%

Cardiac Surgery Application

→ Potential Total Addressable Market: **>$6B** Potential Market



Percutaneous Application

→ Potential Total Addressable Market: **>$2.8B** Potential Market

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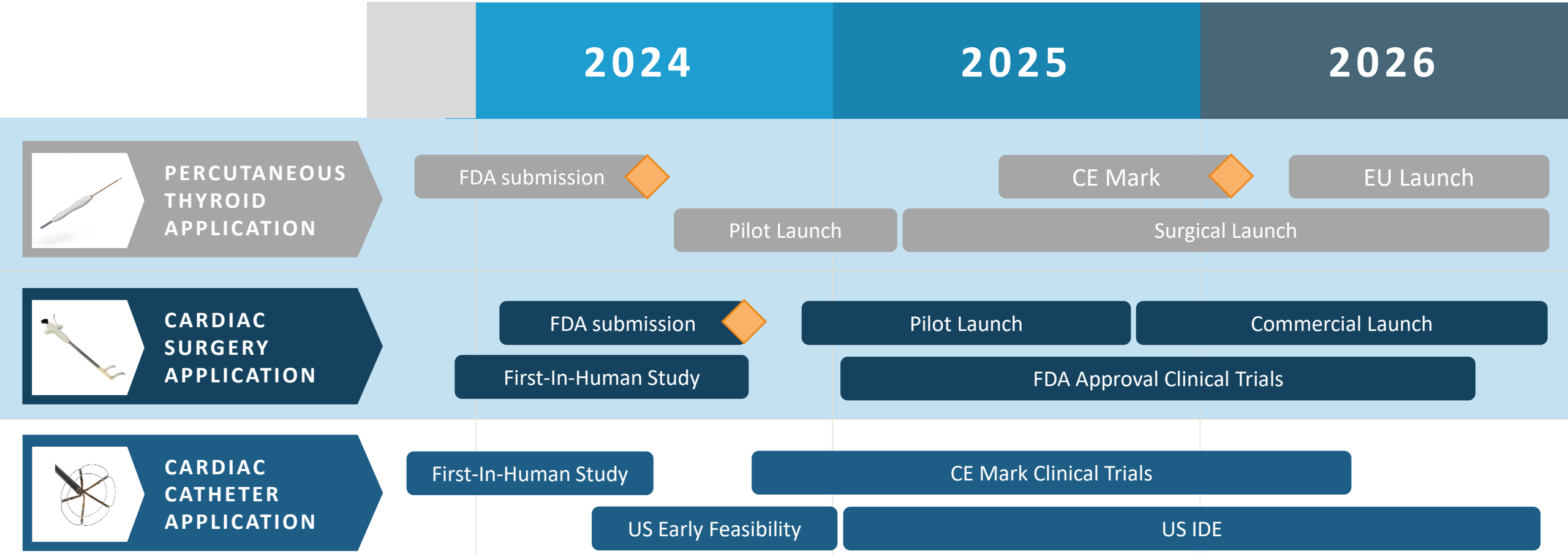
✓ Percutaneous Ablation Commercial Pilot Underway
✓ Surgical Cardiac Ablation Commercial Pilot Planned Late 2024



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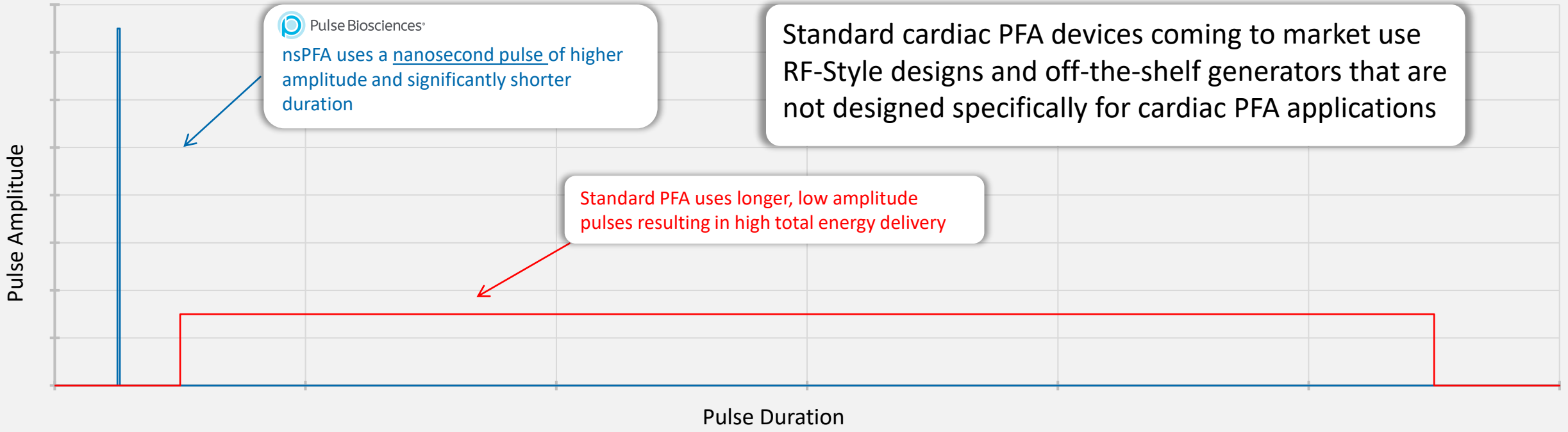
Cardiac Ablation

Next-Generation PFA for AFib

Differentiated Properties of nsPFA Energy Pulses

Nanosecond pulses can be **~500 times shorter** than microsecond pulses

As a result, nsPFA can require **~20 times less energy** to ablate cardiac tissue



Addressing the Entirety of the Growing AF Market

Global Atrial Fibrillation (AF) Disease State:

>$8B

Electrophysiology Market

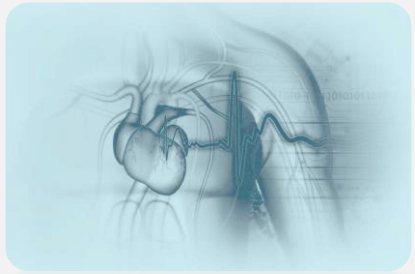
Market Growing at 10-15% CAGR[2]

AF Patients 2019:
~43M Global[1]

Expected 2050:
~72M Global[1]

Surgical Ablation

Potential to address 2M annual open-heart procedures by closing the technology gap



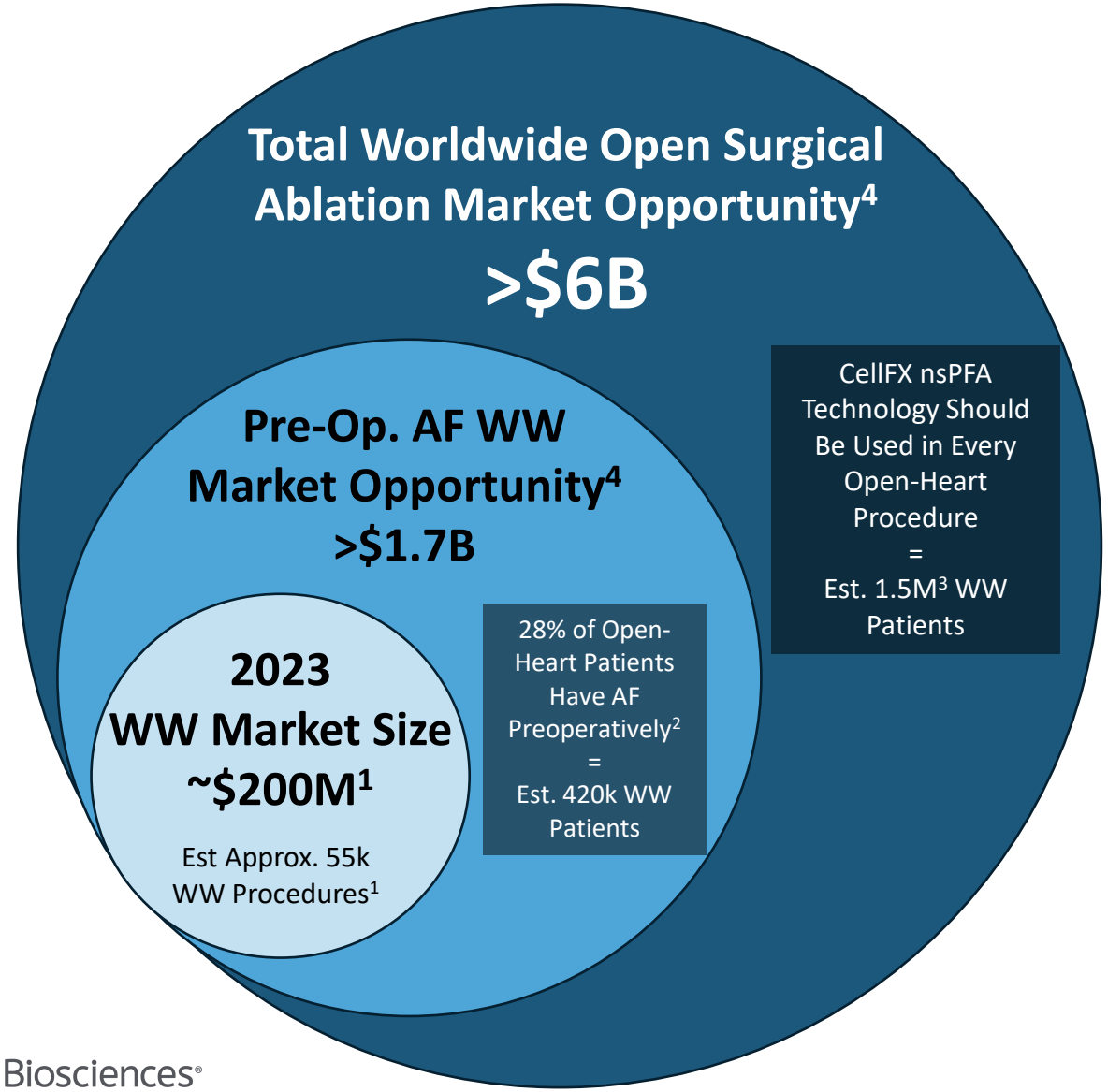
Catheter Ablation

>1M Catheter Ablations Performed Per Year

The same nsPFA energy can be utilized through a programmatic approach to have significant impact across both surgical and catheter-based market segments.

1. Prevalence Data: Institute for Health Metrics and Evaluation (IHME). Global Health Data Exchange. Seattle, WA: IHME, University of Washington. Available at http://ghdx.healthdata.org/gbd-results-tool. Location: Countries, Year: 2019, Context: cause, Age: all ages, Metric: number, Measure: prevalence, Sex: both, Cause: B.2.8. Atrial fibrillation and flutter. (Accessed August 24, 2021)
2. Wong CX, Brown A, Tse HF, et al. Epidemiology of Atrial Fibrillation: The Australian and Asia-Pacific Perspective. Heart Lung Circ. 2017;26(9):807-879
3. Wolfe AF Symposium Report 2023
4. Oppenheimer Report 2020

Surgical Cardiac Ablation >$6B Total Addressable Market



Surgical Cardiac Ablation Market Size Notes

- An estimated 1.5M open heart procedures are performed each year worldwide[3]
- 28% of open-heart patients have diagnosed Atrial Fibrillation (AF) prior to their surgery and should be treated concomitantly[2]
- Cardiothoracic surgeon thought leaders Dr. Niv Ad, Dr. Gan Dunnington, and others believe that all patients undergoing open heart surgery should receive ablation due to the risk of developing AF post surgical procedure
- The lesion quality, safety, and speed of CellFX nsPFA technology will reduce the barriers to concomitant ablation and lead surgeons worldwide to touch every heart
- At an WW ASP of more than $4,000[5] per procedure, this leads to a total addressable market of more than $6B

1) Data on File. Estimate Based on WW Revenues from Cardiac Ablation Players and Market Share.
2) McCarthy, P. M. et al. Prevalence of atrial fibrillation before cardiac surgery and factors associated with concomitant ablation. J. Thorac. Cardiovasc. Surg. 159, 2245-2253.e15.
3) Global Cardiac Surgical Volume and Gaps: Trends, Targets, and Way Forward. Annals of Thorascic Surgery. 2023, ISSN 2772-9931, https://doi.org/10.1016/j.atssr.2023.11.019.
4) Market size for 2023. 1% CAGR for Surgical Volume.
5) ASP based on WW Mix with US Price of $2,500 for Competitive Clamp, $1,750 for Competitive Linear Device, $5,500 for competitive posterior clamp.

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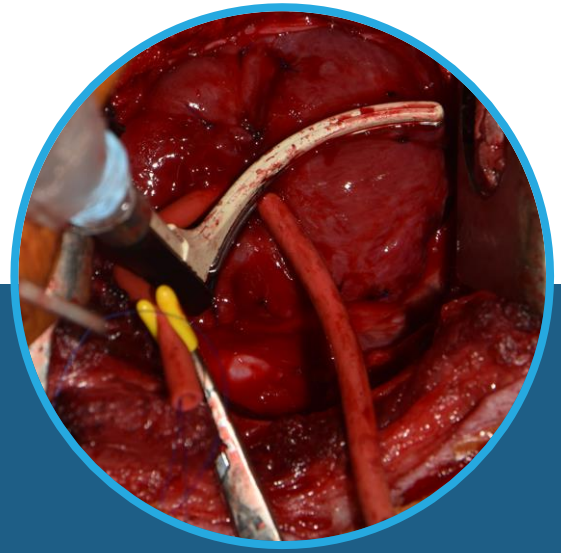
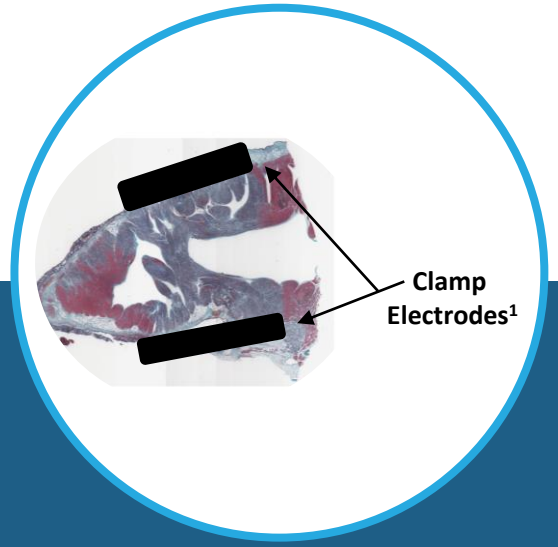
CellFX nsPFA Cardiac Clamp





- A nonthermal cardiac ablation clamp capable of complete transmural ablations in **under 3 seconds**
- Initial preclinical studies have demonstrated **speed, precision and transmurality up to ~25mm between electrodes**
- Collaborating with top institutions and physicians in pursuit of **regulatory clearance**
- **Fundamental IP** for nsPFA energy in cardiac ablation

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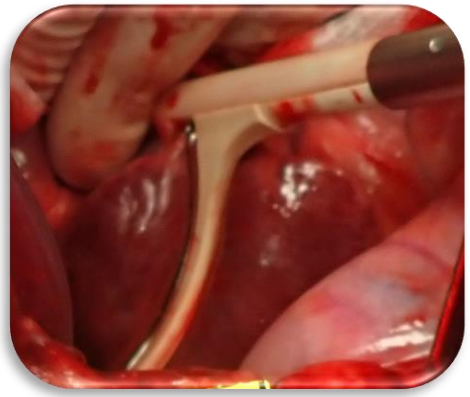
1) 2-Day Histology: Gomori trichrome stain showing treated tissue through the left atrial appendage in a porcine model

CellFX nsPFA Cardiac Clamp 35-Day Preclinical Results

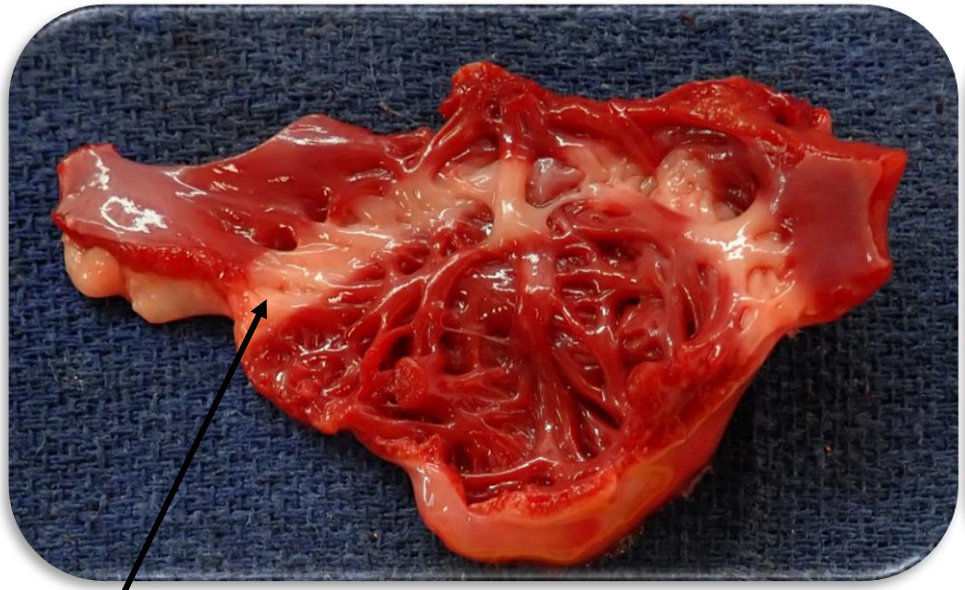
Safe and Effective: 42 cardiac lesions successfully created with the nsPFA clamp in 1.25 seconds (porcine model, n=6)

100% Exit Block (15/15)

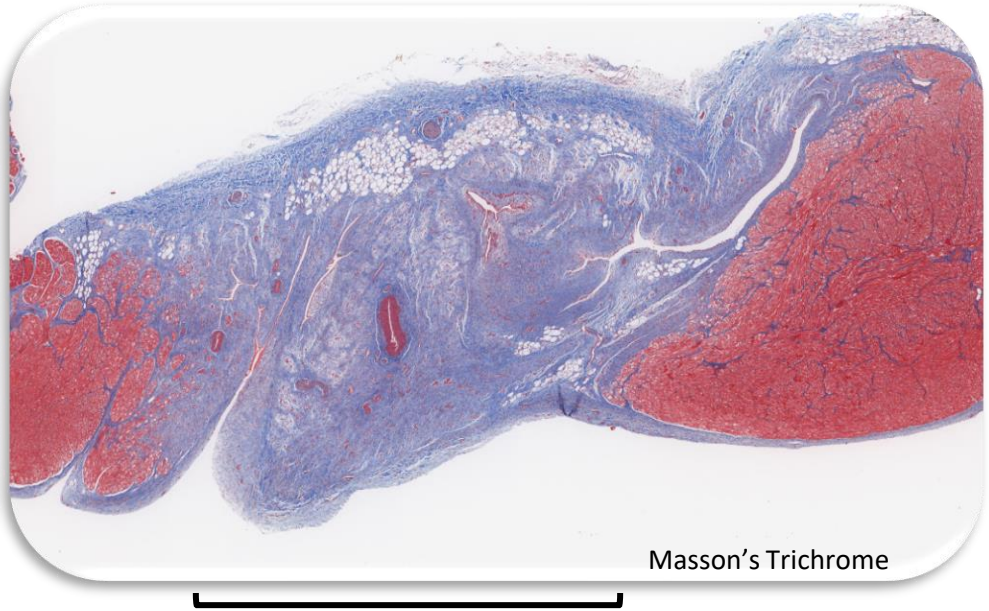


Example of Atrial Appendage Ablation

100% Continuous Transmural Lesions (42/42)



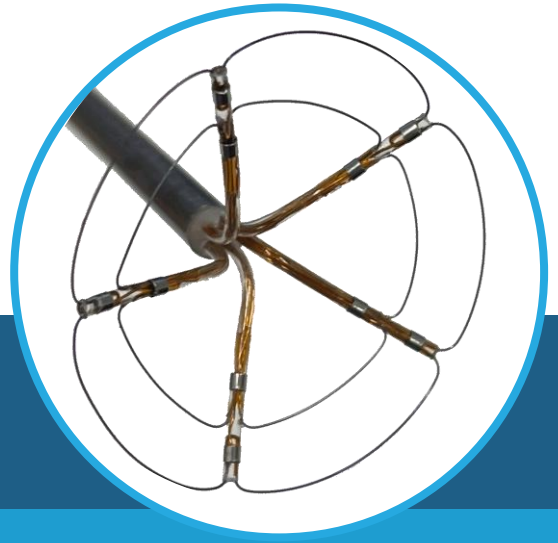
Ablation Zone on Endocardial Surface
Clearly demarcated area of white discoloration indicating the ablated tissue 35 Days post-ablation



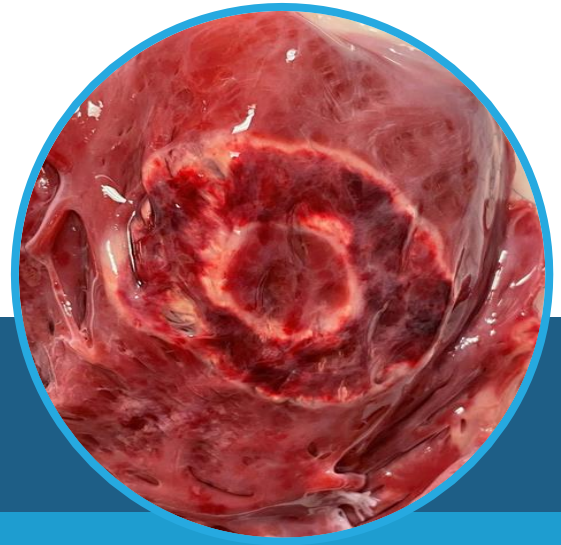
Well Demarcated Ablation Zone
Zone of transmural fibrosis 35 Days post-ablation (stained blue; cardiomyocytes replaced with fibrotic tissues). Unaffected cardiomyocytes on each side of fibrosis zone (stained red)

Catheter Delivery of nsPFA Energy – Cardiac Ablation

nsPFA Generator Platform



Proprietary nsPFA-Optimized Catheter Design



2-Day Endocardial Surface ~5cm Diameter

- Circumferential ablation catheter enabled by nsPFA energy for single-shot PVI ablation
- Reduced muscle spasm and nerve capture due to short duration nsPFA pulses
- No thermal injury due to lower energy of nsPFA pulses
- Preclinical data demonstrating safe, fast and effective ablations
- Compatible with multiple mapping and navigation systems (CardioNXT iMap, JnJ Carto, Abbott Ensite X)

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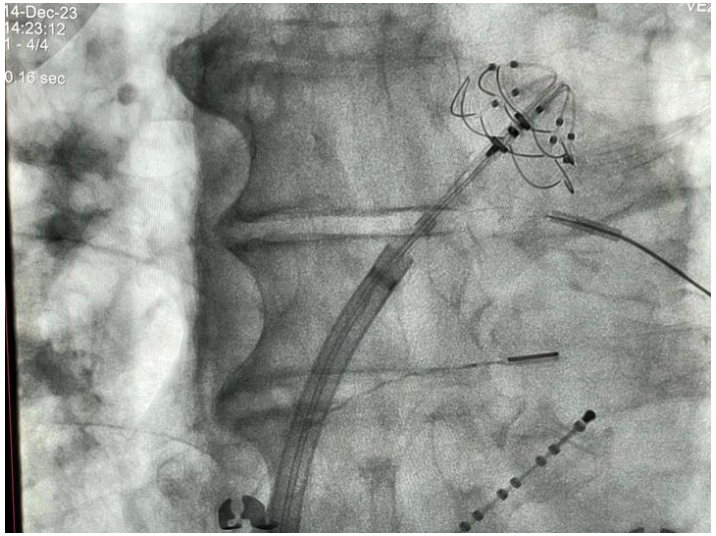
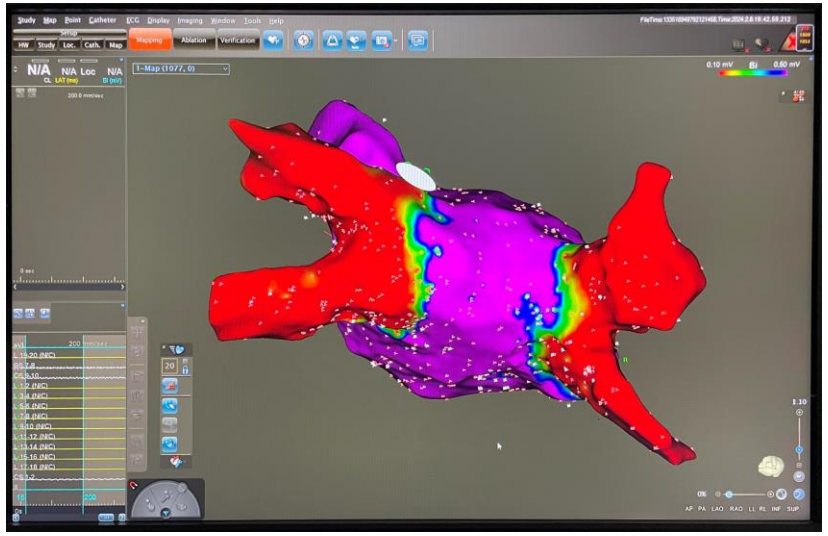
360 nsPFA Catheter Feasibility Study





- Total of 19 subjects treated to date, up to 30 allowed under protocol
- First 14 subjects have had 60-90 day remaps, EP's have never seen better FIH results.
- Enrollment continuing through April/May
- Follow-on studies for CE-mark and/or FDA approval targeted to start by end of '24

Percutaneous Ablation

Opening a new era in ablation therapy for
benign and malignant tumors

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Versatile Generator Platform Delivers nsPFA Across the Anatomy

Transforming the Minimally Invasive Surgery Market

Minimally Invasive Surgery

- Completed all treatments in First-In-Human Feasibility Study
- Preclinical and clinical data demonstrating safety to collateral structures including nerves, vessels, trachea & esophagus.
- Rapid ablation of tissue
  - 8 seconds per ablation zone
- Single treatment efficacy with evidence of 100% clearance within ablation zone in less than 90 days

FDA 510k Cleared March 2024

Benign Thyroid Nodule Ablation >$2.8B Total Addressable Market 2023

Benign Thyroid Nodule Ablation Market Size

- Today, more than 800,000[1] patients must undergo thyroidectomy surgery worldwide with many patients having to remain on lifelong thyroid medication
- Approximately 3 in 4 patients undergoing surgery have benign thyroid nodules with 1 in 4 patients having cancerous thyroid nodules
- It is estimated that more than 8 million[6] people worldwide develop a palpable thyroid nodule without being treated
- Less than 50% of patients that develop a benign thyroid nodule have a thyroidectomy with many choosing not to undergo surgery and electing to tolerate their thyroid nodule
- CellFX nsPFA technology, being a safer, faster, minimally invasive solution, can unlock the watchful waiting patients and potentially double the number of patients
- At an estimated WW Mixed ASP of ~$2,250[5] per procedure, this leads to a total addressable market of more than $2.8B and growing

1) Data on file. Thyroidectomy WW Procedure Data provided by iData
2) https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8215427/
3) Fine-Needle Aspiration of the Thyroid Gland https://www.ncbi.nlm.nih.gov/books/NBK285544/
4) CMS - https://www.cms.gov/medicare-coverage-database/view/lcd.aspx?lcdid=38968&ver=4
5) CDC - https://www.cdc.gov/cancer/thyroid/index.htm
6) Data on file. Based on WW incidence rates. Based on Internal Market Model.

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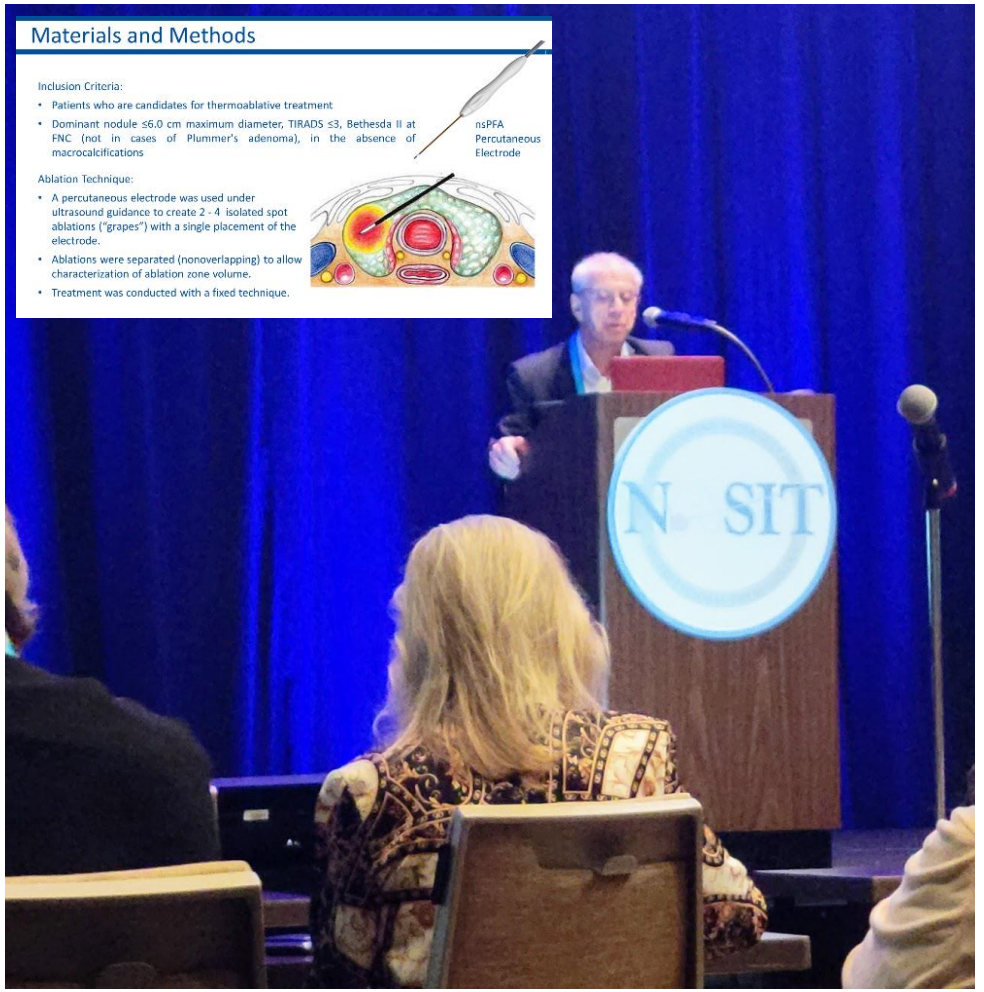
First in Human Data Podium Presentation at NASIT 2024

Key Findings and Observations:

- No reported serious adverse events (SAEs)
- Electrode placement and treated areas visualized by ultrasound
- Majority of reduction of treated areas in first 30 days
- No appearance of scarring or fibrosis on follow-up ultrasound



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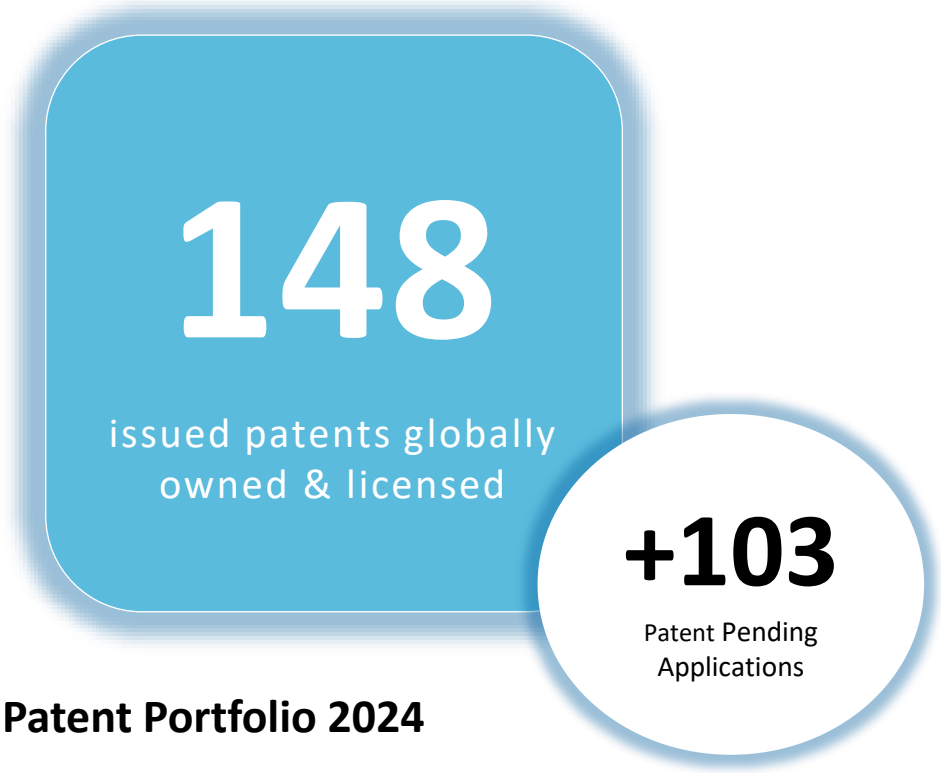
Robust IP Portfolio

Wide and deep IP coverage of nsPFA energy & system



Patent Portfolio 2024

Multipronged Patent Strategy

- Pioneering IP for the use of nanosecond pulses in medicine
- Covering methods and tools for the application of nanosecond pulses in biology
- Continued development and patent filings covering systems, applications, and methods of combining nanosecond pulsing with other biological technologies and agents

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- Expect to initiate Limited Market Release with 2 of 3 product lines in 2024
- **CellFX nsPFA cardiac ablation clamp** – filed FDA 510(k) submission December 2023 with plans to pilot following clearance
- **CellFX nsPFA cardiac ablation catheter** – commenced first-in-human catheter ablation feasibility study in December 2023 with plans to expand enrollment
- **CellFX nsPFA percutaneous electrode** – FDA 510(k) clearance in March 2024 with plans to initiate pilot through 2024