TORPEDO THERAPEUTICS

Torpedo Therapeutics

Creating chip-scale brain implants

Currently raising $2M to get to first in-human data

Non-confidential investor deck

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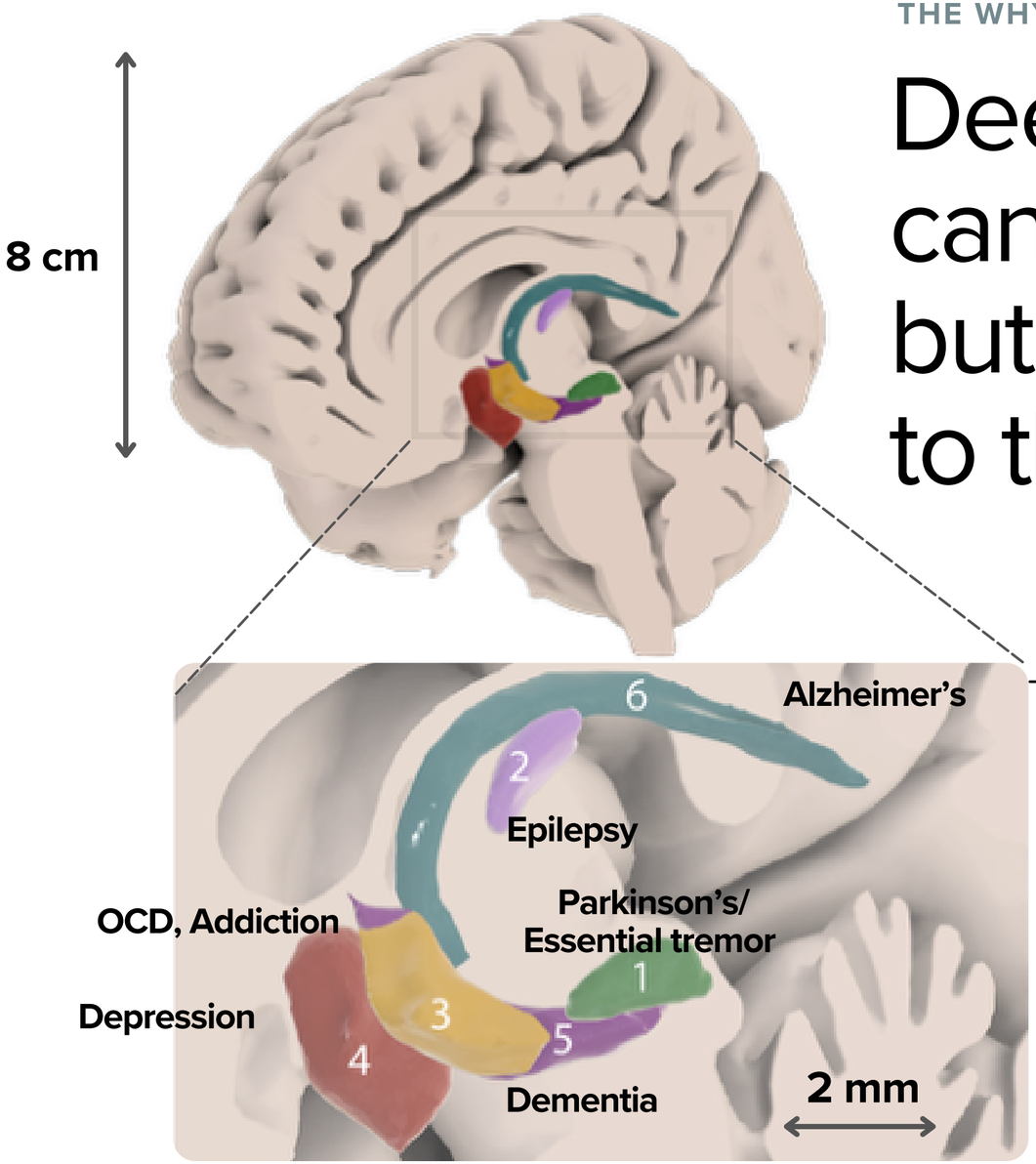
THE WHAT

We are creating chip-scale device implants to read and write brain activity.

Torpedo’s chip implants sense brain activity with **single-neuron spatial precision** and **modulate** any sensed pathological brain activity.

THE WHY

Deep brain neuromodulation can treat many brain diseases, but precise targeting is difficult due to the small size of these regions.



Brain regions associated with neuropsychiatric and neurodegenerative disorders are located deep inside the brain.

Non-invasive technologies cannot reach these areas.

Deep brain neuromodulation often induces severe side effects because of imprecise targeting.

The promise of high-precision neuromodulation to treat neurological disorders

Deep brain stimulation, the best known form of neuromodulation, has been used to treat motor disorders since 1997. There is **increasing interest** to use similar approaches to treat a wide range of neuropsychiatric and other neurological disorders. To become standard of care, **devices need to be capable of more precise targeting in the brain**, to prevent the severe side effects often reported by patients.

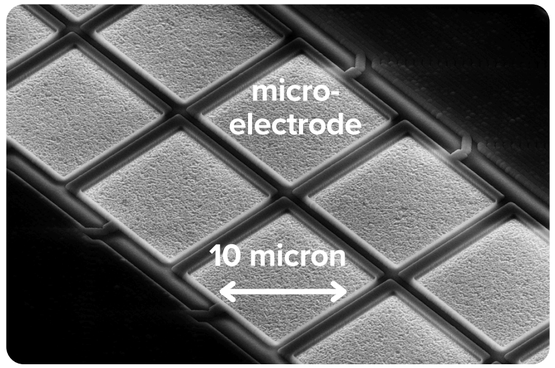
Speech deficits | **Motor disorders** | **Depression**

OUR SOLUTION

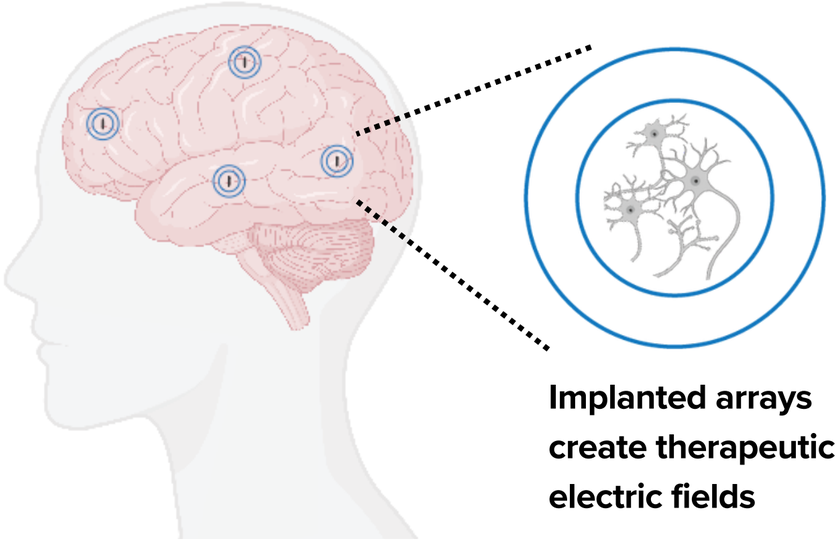
We are using advanced semi-conductor manufacturing to create miniaturized neuromodulation device implants.

Advanced semi-conductor manufacturing allows for minitiurization of implants.

It is now possible to create tiny chip implants with **micron sized electrodes** that can sense and stimulate on the single neuron level. We are **the first** to commercialize such implantable and closed-loop chips for high-precision neuromodulation.



Array of micron-sized electrodes for both sensing and stimulation.



Implanted arrays create therapeutic electric fields

REVENUE MODEL

We have a clear GTM strategy and are close to a first revenue stream

We are committed to a **step wise Go-To-Market Strategy** in which we will create short-term revenue with research and diagnostic devices while navigating the more comples regulatory requirements for therapeutic devices.

Commercialization of research grade devices

In Q2 of 2027, we will start selling **research grade** devices through distributors and to other BCI companies (3 LOI's in hand).

Diagnostic devices for epilepsy seizure detection

By 2030 we expect to be selling clinical grade diagnostic devices (**510k**) for acute testing in epilepsy patients.

Therapeutic devices for treating neurological disease

By 2032 we expect to have performed pivotal clinical trials of chronic chip implants and will apply for pre-market approval (**PMA**).

MARKET OPPORTUNY

The broader neuromodulation market is >$400B

Initial Beach Head Markets

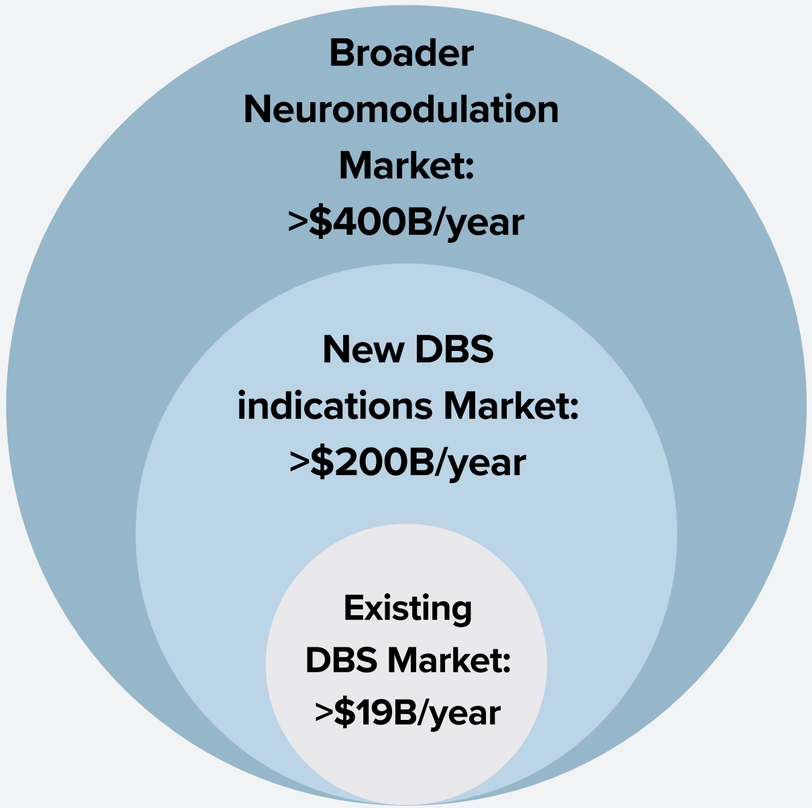
The initial beach head market is that of the existing **deep brain stimulation (DBS)** market for epilepsy and motor disorders.

Follow-up Markets

New indications for DBS-like neuromodulation include neuropsychiatric disorders such as clinical depression, dementia, Alzheimer's disease and schizophrenia.

Broader NM Market

The broader neuromodulation market includes brain-computer interfaces such as visual and motor prostheses for patients suffering from ALS, quadraplegia, TBI etc.



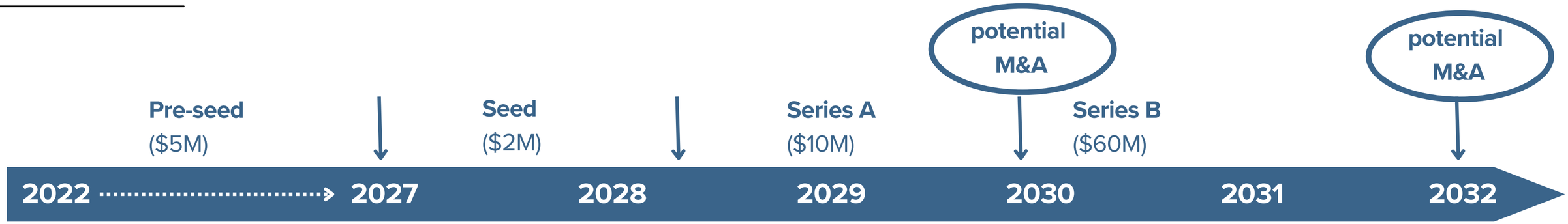
Progress to date and forecast

Currently raising a Seed Round

Currently raising a Seed round of $2M to collect our first in human data with Chip I.

First potential M&A opportunity expected in 2030

We will collect first therapeutic data with clinical grade Chip II by 2030, which could lead to a M&A.



Animal data gathered

Developed software platform

Patent applications submitted

Designed prototype Chip I

Commercialization & revenue from Chip I

Biocompatibility & Safety Studies

Perform first-in-human studies under IDE with Chip I device

First acute **surface brain** human data

Clinical Chip II design

Biocompatibility & Safety Studies

Deep brain IDE study with Chip II

510k for diagnostic device

First acute **deep brain** human data

Pivotal clinical trials with chronic deep brain implants

Chronic **deep brain** human data

PMA for chronic device

COMPETITIVE ADVANTAGE

We are a team of domain experts

Founders are MIT scientists

Founding team are MIT scientists with deep domain expertise and over 20 years of experience in their respective fields.

Excellent clinical advisory board

Current clinical advisors are two functional neurosurgeons with decades of experience in devices for neuromodulation to treat patients.

Founding team and Board of Directors

Ingrid van Welie, PhD
Founder and CEO
Neuroscientist, expert in neurophysiology

Jorg Scholvin, PhD
Co-Founder and Member
Electrical engineer, expert in semiconductor manufacturing

Clinical Advisors

Joshua Aronson, PhD

Functional Neurosurgeon
Harvard Medical School

William Anderson, PhD

Functional Neurosurgeon
Johns Hopkins Medical School

TRACTION IN THE FIELD

Traction so far

Raised $5M in non-dilutive funding, YC backed company

We have raised $5M in SBIR Phase I & II funding from NIMH to develop and validate our technology and raised a pre-seed round backed by YCombinator.

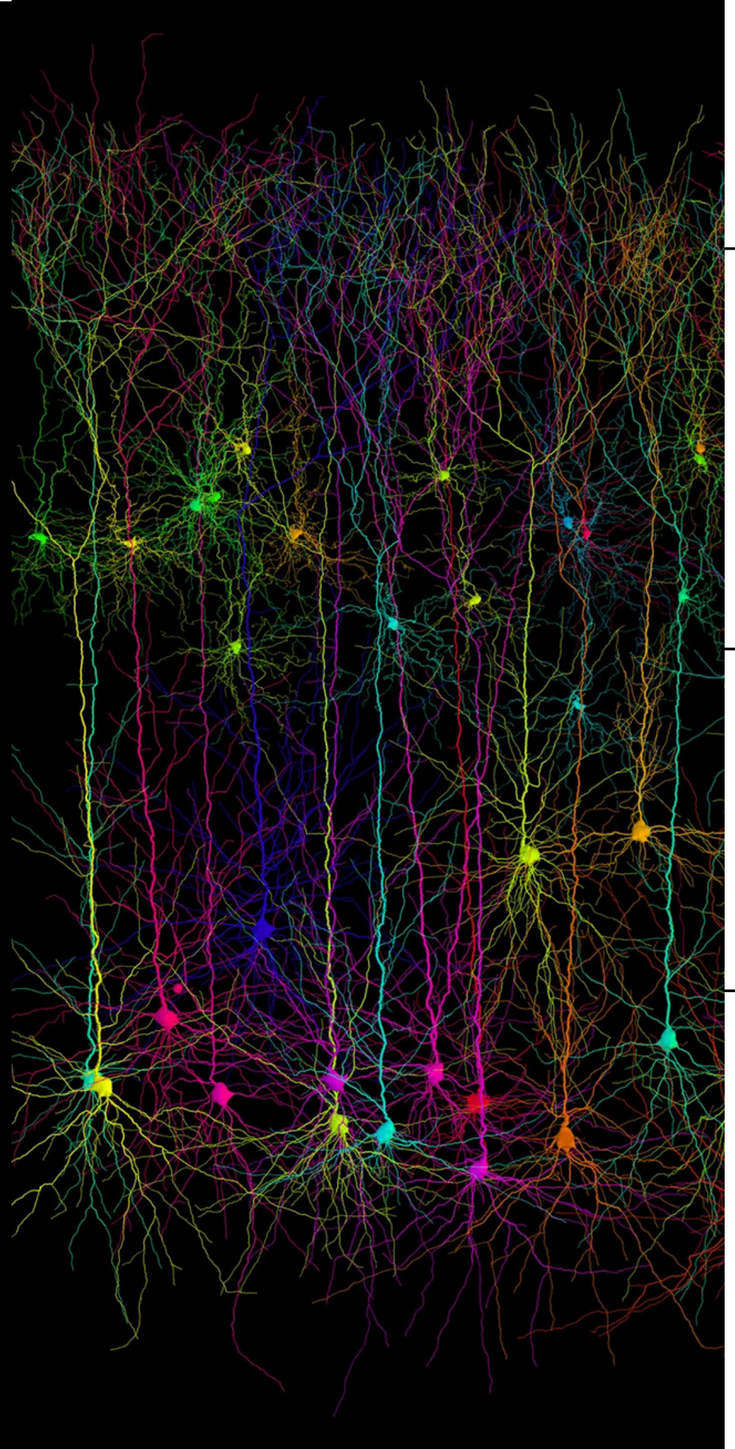
Unique, fully owned IP portfolio

US_12,239,833
Adaptive closed-loop deep brain stimulation control
Pending:
PCT/US24/17059
US_18/593,181
US_18/594,052

Pre-clinical animal data and prototype in hand

We have animal data recorded with early prototype devices and are finalizing first clinical grade closed-loop prototype for proof of principle testing in humans in 2027.

Currently raising a $2M seed round to obtain first-in-human data



Creating the first high-precision and closed-loop chip implant

We are creating fully implantable chips for bidirectional interfacing with the brain. Our devices have single neuron level sensing and stimulation capabilities.

Team of deep domain experts

Torpedo’s team consists of PhD level engineers, scientists and clinical advisors, each with decades of deep domain expertise.

Multi-use technology with large and broad market opportunities

Our technology is a platform technology with wide ranging applications in neurology and other areas of application in bioelectronic medicine.

Thank You

Do you want to partner with us?

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