

The logo features a large, stylized white letter 'P' with a thick red outline that loops around it. To the right of the 'P', the words 'ioneer Ear' and 'Technologies' are written in a white, sans-serif font. The background is a blurred image of hands holding a small, intricate medical device.

# Pioneer Ear Technologies

**Innovative medical devices for ear & hearing disorders**

**Ida Pavlichenko, PhD**

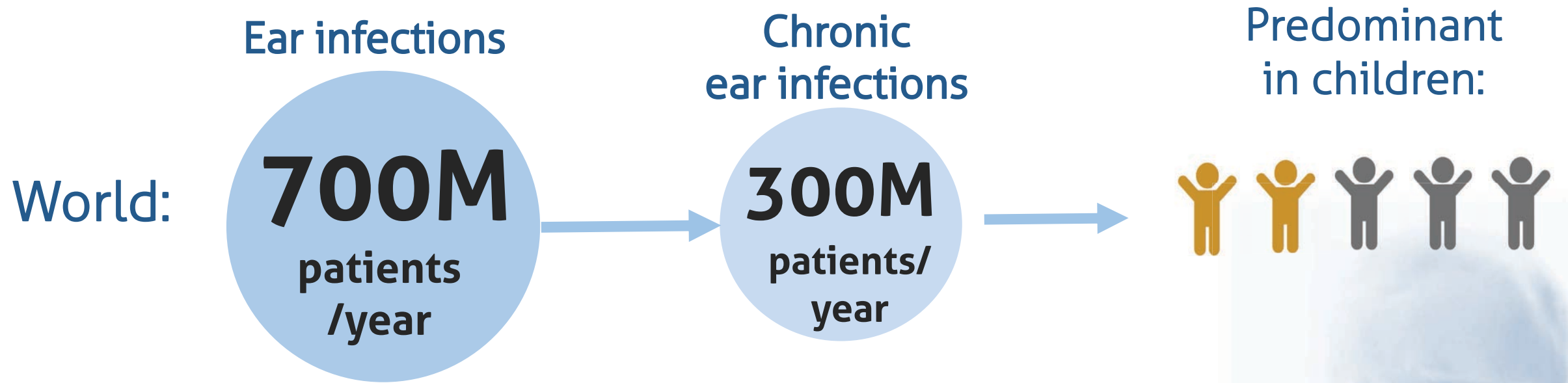
**[ida@pionear-tech.com](mailto:ida@pionear-tech.com)**



Bianca was in constant pain because of chronic ear infections and persistent fluid in her ears...

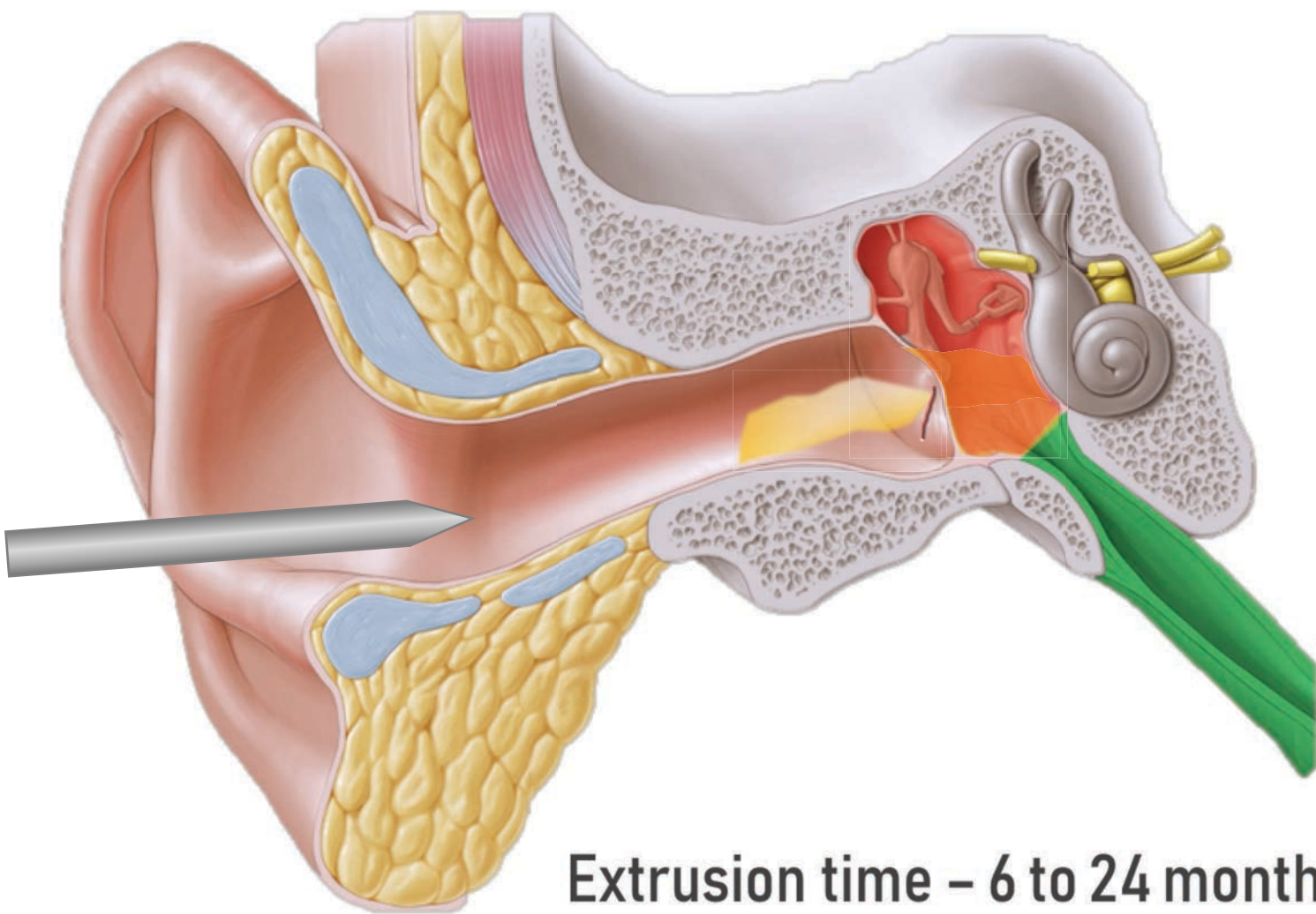


# Ear infections are a **major global problem** with high socioeconomic impact



- #1** cause of
- healthcare visits (>\$10B global cost)
  - irreversible hearing loss (in ~60% of patients)

In US, 40% of kids develop Chronic Condition  
7-10% undergo tube insertion surgery



Extrusion time – 6 to 24 months

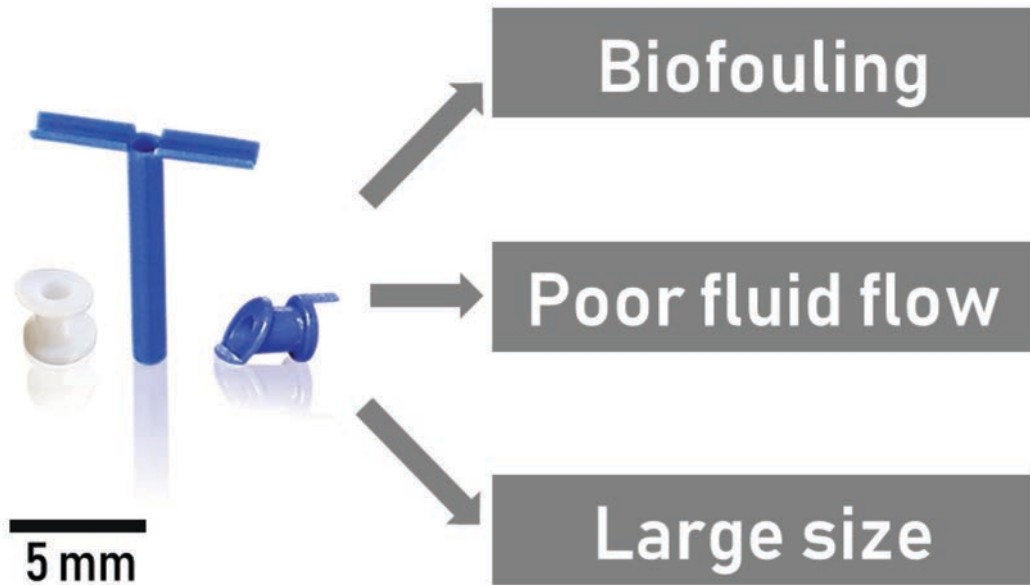


**1M**

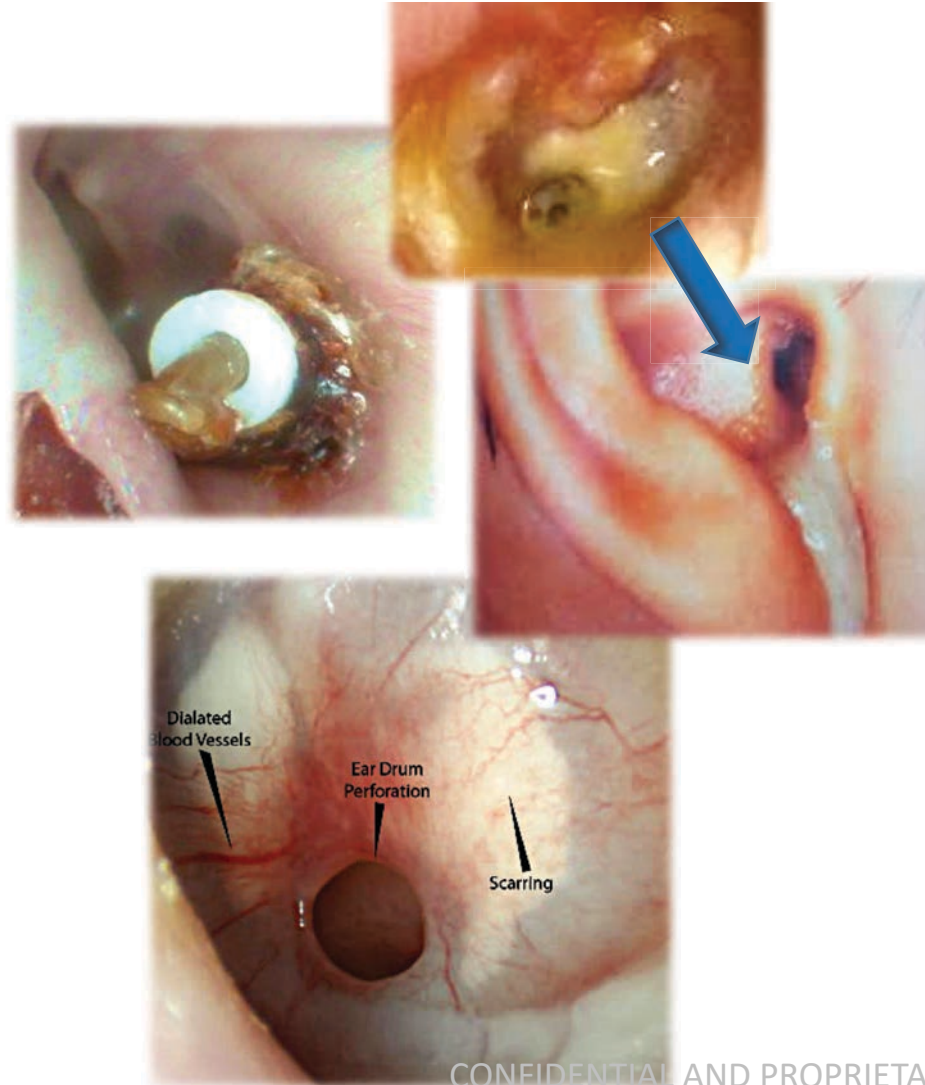
patients/year in US  
receive  
tympanostomy tubes



# Current tubes have post-surgical complications in up to 75% of cases



- Unnecessary revision surgeries under general anesthesia
- Added healthcare cost



Silicone tube



# PionEar device **solves** all current problems

## ✓ PionEar's solution:

1. No biofouling

2. Enhanced fluid flow

3. Small size

## ✓ Proprietary material & design:



## ✓ IP:

- Provisional application filed in **March 2018**
- PCT application filed in **March 2019**

Winners  
2018:



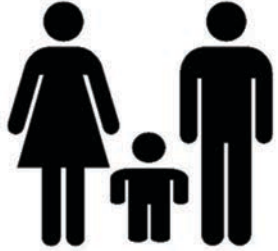
National Inventors  
Hall of Fame®



- Class II device
- CPT code available
- Based on all-FDA approved materials

CONFIDENTIAL AND PROPRIETARY

# Strong value for all stakeholders



prevents  
thousands of  
unnecessary  
surgeries



saves  
millions of hours  
in the  
operating room



saves  
\$ billions  
in direct &  
indirect costs

Ear infections  
market

**\$300M**  
US

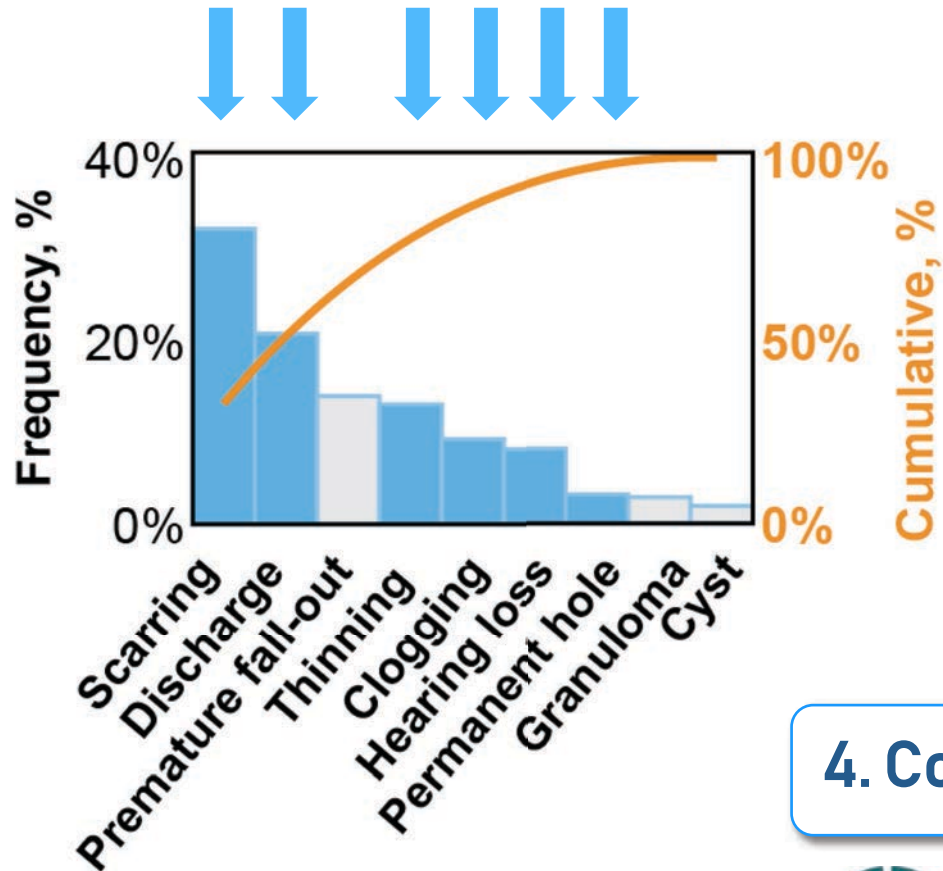
**\$1B**  
Global

**\$5-15B**  
Global

Hearing &  
balance disorders  
market

# Verified High Safety and Efficacy of PionEar Tubes

PionEar targets all major failure mechanisms

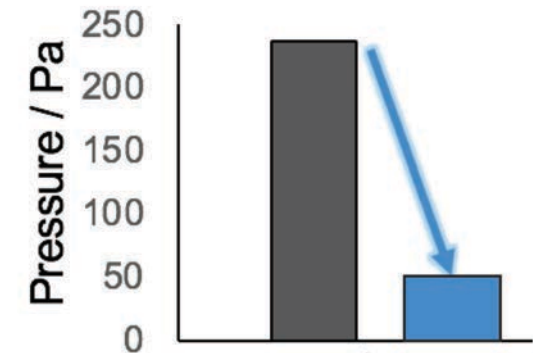
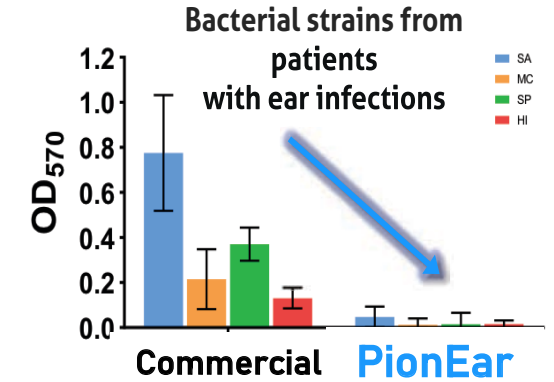


1. Suppressed blood, bacterial, and cellular adhesion

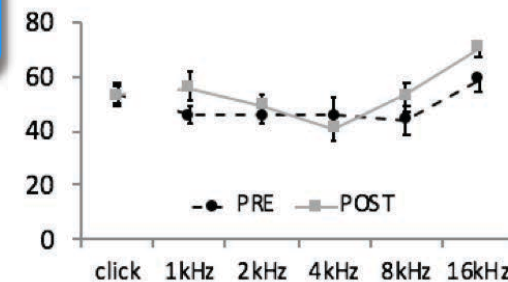
2. Effective therapeutic delivery

3. 50% smaller size

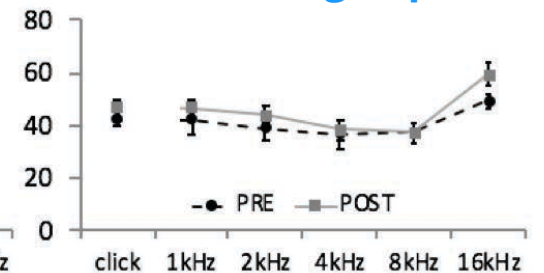
4. Confirmed safety



ABR: Commercial  
silicone tube








ABR: PionEar  
No Hearing Impairment








# PionEar's product is superior to its alternatives







| Feature             |  | Commercially available   |   |  | Not FDA-cleared   |
|---------------------|---|--|---|--|---|
|                     |   | <br><i>Activent</i> | <br><i>Ultrasil</i> | <br><i>Au/Pt/Ag</i> |  |
| Ventilation         | ✓   | ✓  | ✓   | ✓  | ✓   |
| No cell adhesion    | ✓   | ✗  | ✗   | ✗  | -   |
| Enhanced fluid flow | ✓   | ✗  | ✗   | ✗  | -   |
| Small size          | ✓   | ✗  | ✗   | ✗  | -   |
| Biodegradable       | -   | ✗  | ✗   | ✗  | ✓   |
| Pricing             | \$\$\$  | \$   | \$\$  | \$\$\$   | \$\$\$  |

Potential partners

Tube insertion devices:

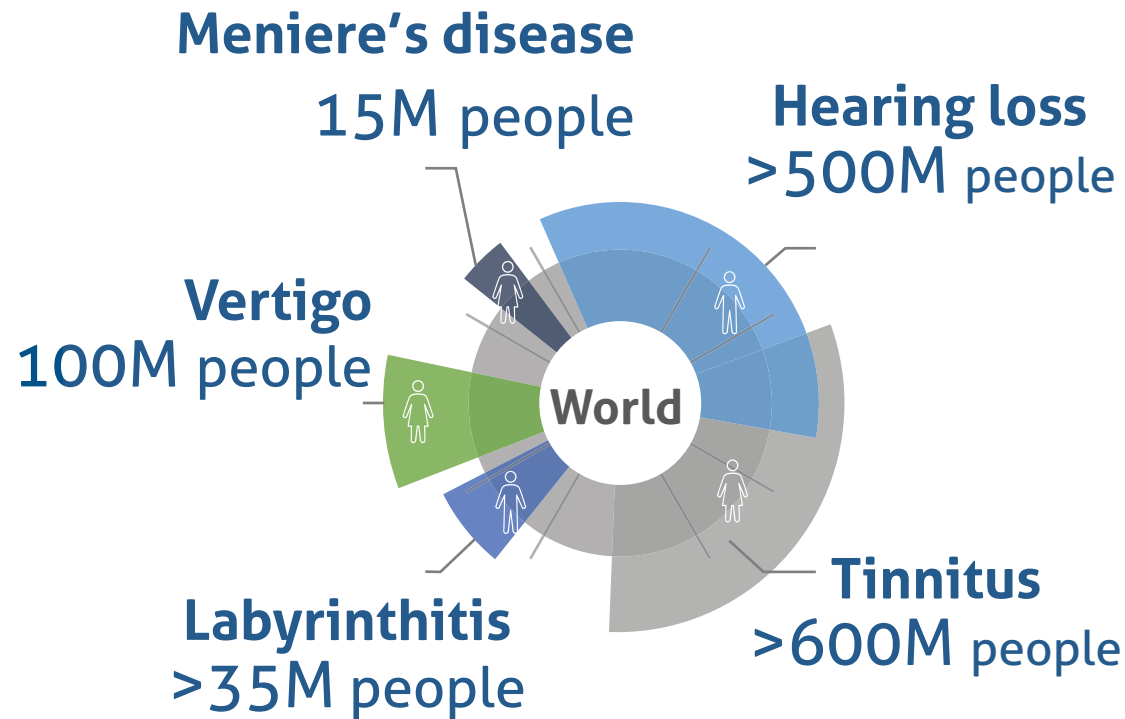
Pharma:

# Platform technology that enables future expansion

*PionEar will address the **large unmet need** in drug delivery for:*

*Other medical applications:*



# Short timeline to market & strong value

2018                      2019                      2020                      2021                      2022-23



Secured \$435K

- R&D
- *In-vivo/vitro* validation



Seeking for the Seed Funding: \$3M

- GMP manufacturing/GLP studies
- First FDA 510k clearance
- In-man studies for additional claims in second 510K
- Marketing/Distribution





# Committed and diverse team to solve the problem

## Founders:



**Ida Pavlichenko, PhD**  
President & Co-founder



**Prof. Joanna Aizenberg, PhD**  
Co-Founder

## Medical advisors:



**Massachusetts  
Eye and Ear®**  
sense life. experience life.

### ENT surgeons & microbiologists



**Aaron Remenschneider**  
MD, MPH  
MEEI/UMass Memorial Hospital/HMS



**Elliott Kozin**  
MD  
Mass Eye&Ear



**Paulo Bispo**  
PhD  
Mass Eye&Ear



**Prof. Anne  
Schilder**  
MD, PhD

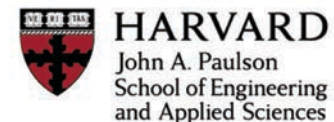
## Medical device advisor:



## Business advisor:



**Robert  
Cunningham, BS**  
BD Advisor



WYSS INSTITUTE  
Validation Grant

Gold Winner 2018  
**MC**  
MASSCHALLENGE

MassCONNECT  
MassBio  
MASSACHUSETTS BIOTECHNOLOGY COUNCIL



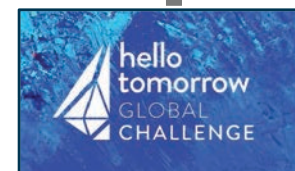
October 2018

March 2019

May 2018

July 2018

GRAND PRIZE  
Mass Innovation  
Nights



GRAND PRIZE  
Collegiate Inventors  
Competition  
National Inventors  
Hall of Fame

MassMEDIC  
Massachusetts Medical Device Industry Council  
IGNITE 2019

Idea  
October  
2016

Hi  
GRAND PRIZE 2018  
Harvard President's  
Innovation Challenge







Thank you!



Innovative medical devices for ear & hearing disorders

Ida Pavlichenko, PhD

[ida@pionear-tech.com](mailto:ida@pionear-tech.com)