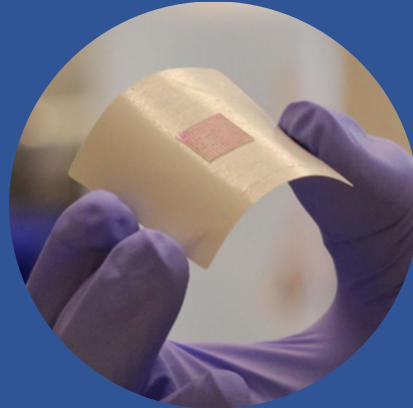


# SingleTimeMicroneedles

Improving drug and vaccine deployment worldwide



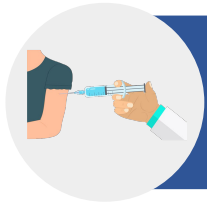
STM



Jasdeep Singh, Ed.D., MBA  
CEO

[stmpatch.com](http://stmpatch.com)

# The Problem: Deployment



## Labor:

Injections are a driving cost

Labor can more than 200%  
the cost of the dose



## Supply Chain:

Cold chain is limiting

Cold chain can be up to  
2x the cost of the dose



## Compliance:

Multiple dosings are problematic

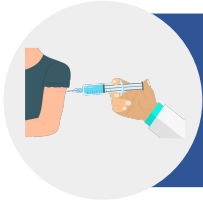
25% of owners report  
forgetting doses

# The Impact

***Current Model Costs Lives, Money, Health***



To Billions of Patients



**20% (Human); 50% (Animal) Reduction**  
in vaccine access in the USA alone

To Billions of People



**50% Reduction** in dairy herd yield

To Billions of Lives - Zoonotic



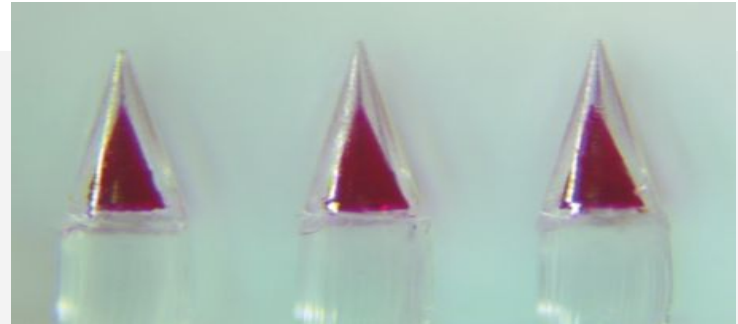
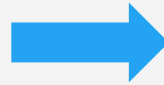
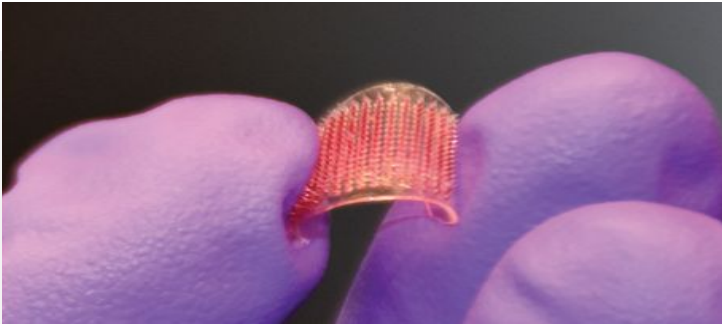
**Increased Parasitic infections** (25%)

# The Solution



## Unique Advantage: Multi-Dose and Temp-Stable Patches

- Painless patch is removed ([Animation](#))
- Invisible needles are embedded with vaccines & drugs
- Multi-dose, longitudinal dose, or single dose
- Patented technology (1 issued (US, EU, India, China), 4 in various stages)



- ✓ No missed doses
- ✓ No cold chain
- ✓ Lowered deployment costs

# The Team

*Acquired Businesses, Engineering, MIT, UConn, Sanofi*



**Jasdeep Singh, MBA**  
Co-Founder & CEO



**Steven Szczepanek, Ph. D.**  
Market Lead, Vaccinology/Immunology



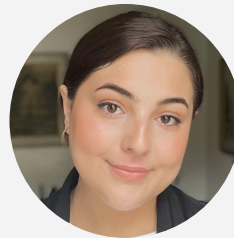
**Thanh Nguyen, Ph.D.**  
Co-Founder & CTO



**Nicholas Farrell, MS**  
Research Lead, Engineering



**Parbeen Singh, Ph.D.**  
Research and Product Development



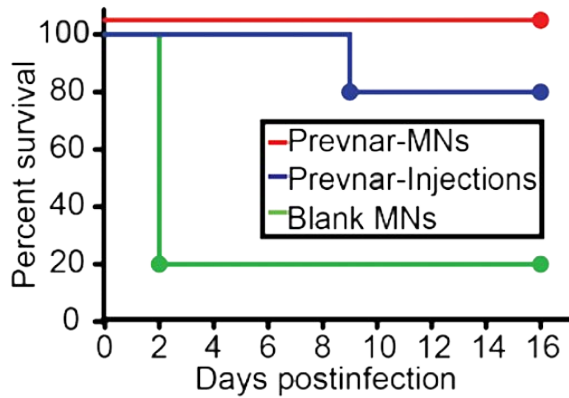
**Morgan Hunte**  
Ph.D. Student, Drug/Vaccine  
Researcher

# The Effectiveness

## Vaccines and Drugs

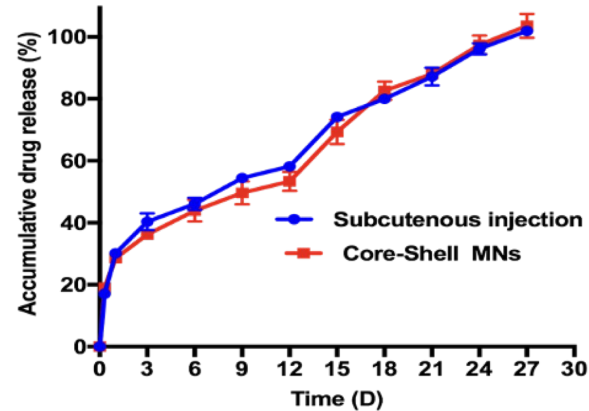


### Improved Effectiveness



**0** fatalities  
(more protective)

### Effective Drug Bioavailability



**1** painless patch versus  
**4** painful injections

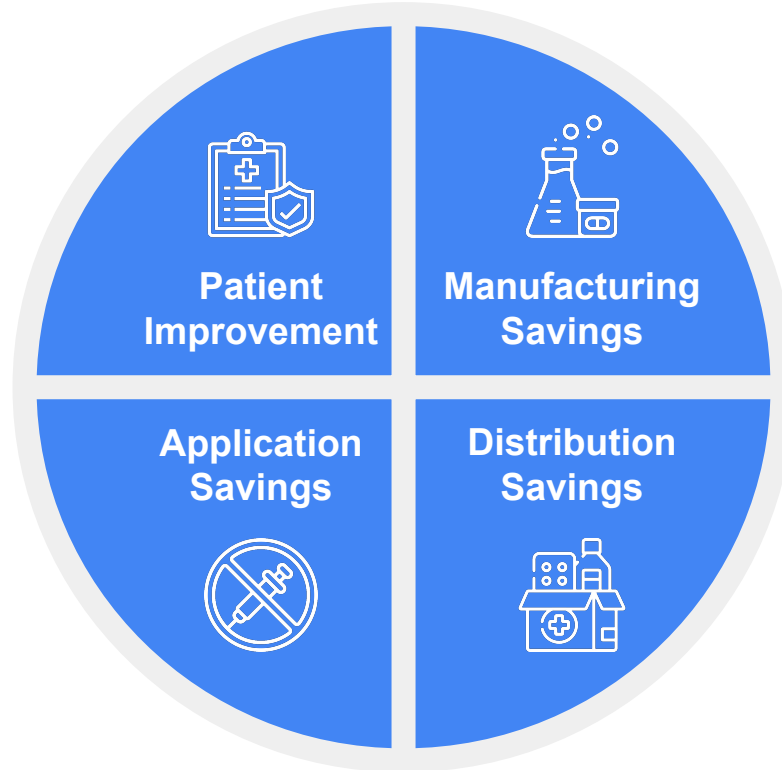
# The Chain of Improvement



[#1 Emerging Technology - World Economic Forum](#) *(link)*

- Greater efficacy
- Equal/higher bioavailability
- No missed doses
- No Pain
- No broken needles

- No biohazard/ sharps waste
- No needle sticks
- Target species applicator



- Up to 42% cheaper manufacturing
- Reduced carrying-inventory costs

- 300% decrease in shipping density
- No cold storage at any step
- Long shelf life

# The Revenue Model

*Diversified*

TODAY



UPCOMING



## Contract Research Organization

Pharma partnership drug and patch development

**\$250k in 2024**



## Contract Manufacturing Organization

Manufacture R&D and pre-clinical patches



## B2B Manufacturing/Sales (2025)

Develop STM branded products



## Royalties & Licensing

Sales on co-developed products

**STM is a Formulator not a Medical Device = Unlimited Diversified Growth**



# The Continuum

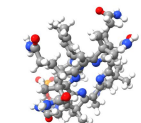
## One Market Opens Another



- Peptides
- Cosmetics
- Minerals
- Vitamins

- Generic drugs
  - Pain
  - Antibiotics
- Supplements
- Mood support

- Livestock Vax
- Companion animal Drugs/Vax



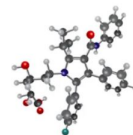
Human  
"Less"  
Regulated  
Market



Animal STM  
Developed  
Products



Animal Pharma  
Collaboration  
Products



Human  
Drugs



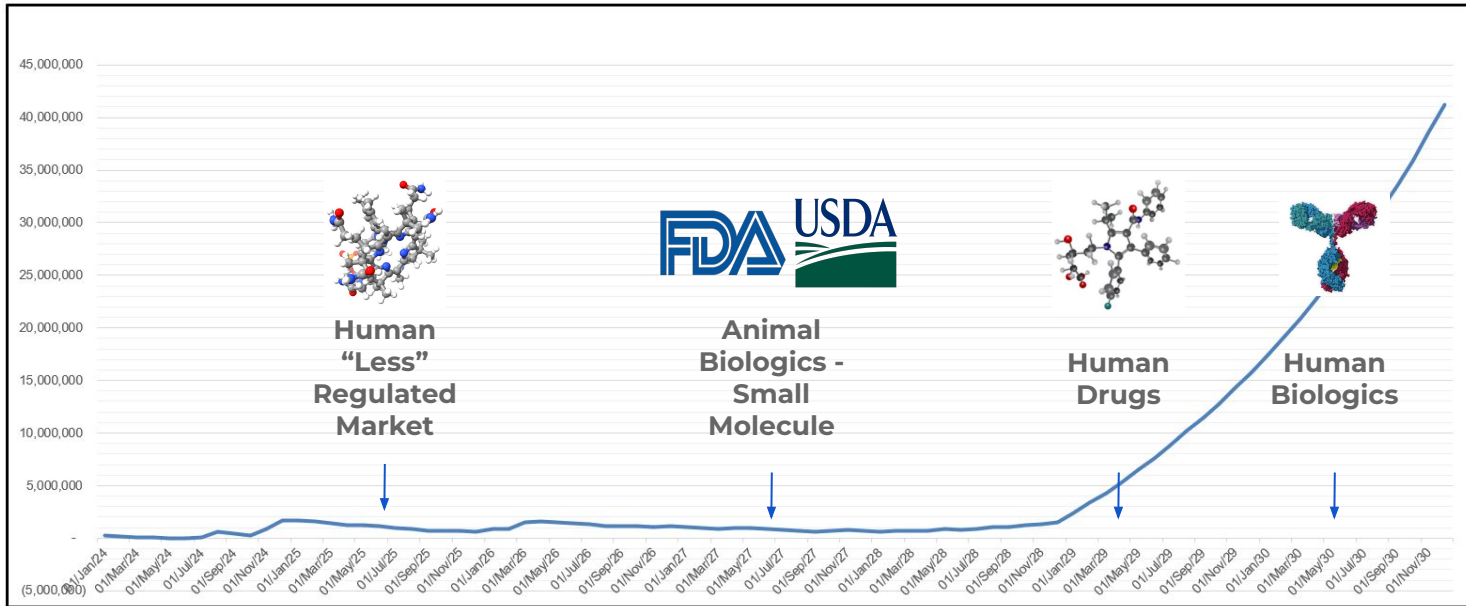
Human  
Biologics

- Earlier products generate revenues to open new applications and markets
- Experience supports engineering to improve product and lower prices
- Each step collects safety, effectiveness, and manufacturing data to enter new markets

**Multiple Shots on Goal = Multiple Revenues, Markets, and Regulatory Pathways**

# The Pathway & Finances

## Cash Curve & Market Entrances



The regulatory/market pathway from animal to human offers continuous revenue-generating pathways and multiple high-return potential exits for investors

# The Impact

## One Health

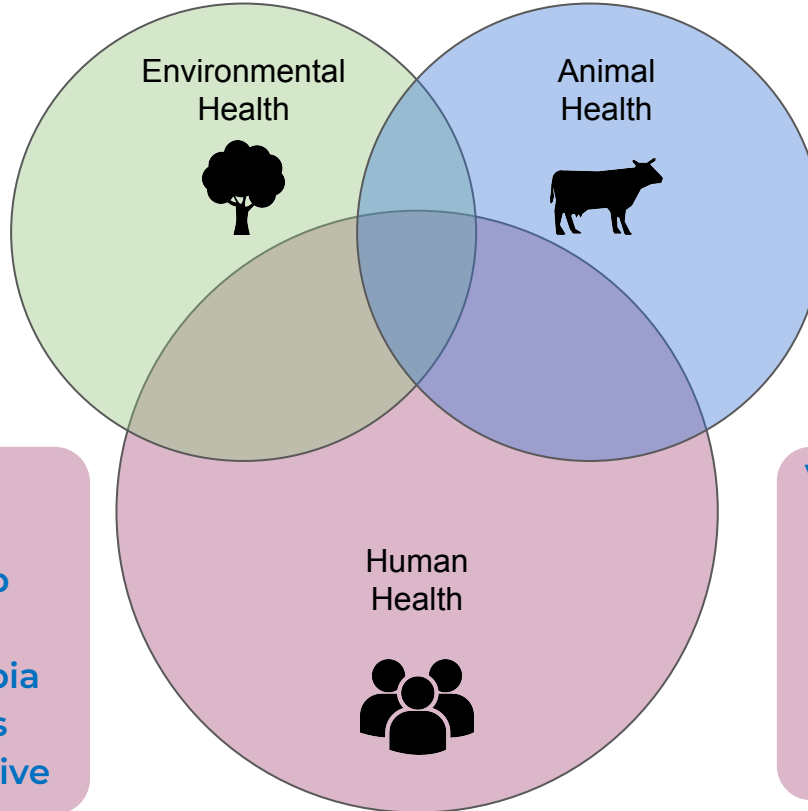


### Greenhouse Gases

- Cows greatest agricultural contributor
- Pharma produces 55% more per \$1m revenue

### Improvements

- Up to 50% of vax wasted due to temp
- 16% adults skip vax due to needle-phobia
- Multi-dose flu shots 35-50% more effective



### Vaccination Benefits

- BVD vaxxed cows produced 60+€ more milk
- 12% of swine lost from sale due to needle-stick breakage/injuries

### Vaccination Levels

- Access is a main vax predictor
- Distance from clinic decreased vax levels more than partisanship

# The Growth

## One Healthier World



**TOTAL ANIMAL MARKET (Drugs and Vaccines)**

**\$40B**  
**6.8% CAGR**



Open

### THE HUMAN MARKET

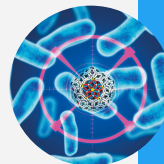
**\$75B**



**Vaccines**

- mRNA
- COVID
- Influenza
- Protection Stockpile

**\$41B**



**Antibiotics**

**\$81B**



**Pain**

# The Call to Action

Improve community health multiple doses at a time

**Seed Round (\$2m) - 45% Subscribed**  
***Lead Investor - Due Diligence Available***



SAFE Note  
**2yr Maturity**  
\$8m valuation cap  
20% discount



- Accelerate Go-to-Market (2025)
- Scale manufacturing
- Target-species pilot studies
- Submit data to USDA/FD/EU

# The Traction:

## Market-Based Development



### Revenue & Partnerships

Animal Vaccine Market  
\$11.8B Market, 9.3% CAGR

**Paid+ Profit** [ Veterinary Vaccine Development with Top 10 Human/Vet Pharma Company  
mRNA-LNP Pilot Study (Vet-Human)



Space and Funding in Late-Stage  
Negotiation for International Expansion

### Science-Market Leadership

WORLDVACCINE  
CONGRESS | WASHINGTON



VETHEALTH  
GLOBAL



projectmedtech..



Closed \$500k Pre-Seed Round | Revenue Positive Q1 2024

# The Acquisition Option #1

## *Pharmaceutical Company*



### Strengths

- Highly experienced acquisition market
- Allow for animal and human to be sold separately or together
- Market premiums
- Strong competitors with similar interests

**Potential exits:**

- 1. Post market validation in animals**
- 2. Multiple products in animal market**
- 3. Entrance into the human market**

# The Acquisition Option #2

## *Manufacturing Company/PE*



### Strengths

- Drug/pharma agnostic
- Market expansion for current manufacturers
- Animal and human applications may stay together
- Further develop technology

**Potential exits:**

- 1. Post manufacturing of first product**
- 2. First regulatory-approved animal patches**
- 3. Entrance into the regulated human market**



# The References



1. Labor cost increase of biologics ([JAVMA](#))
2. Supply chain costs ([Vaccine](#))
3. Parasitic infection rate increases ([AVMA](#))
4. Vaccine reduced access ([CDC](#))
5. Reduced herd yield ([Veterinary Medicine and Science](#))
6. Cows greenhouse gas emissions ([UC Davis](#))
7. Pharma greenhouse gases ([World Economic Forum](#))
8. Improved dairy production from vaxxed bovine ([PLos One](#))
9. Wasted vaccines due to lack of temp controls ([UN](#))
10. Needle phobia ([Harvard Health](#))

**[STM Technology Peer Reviewed Journal Articles](#)**