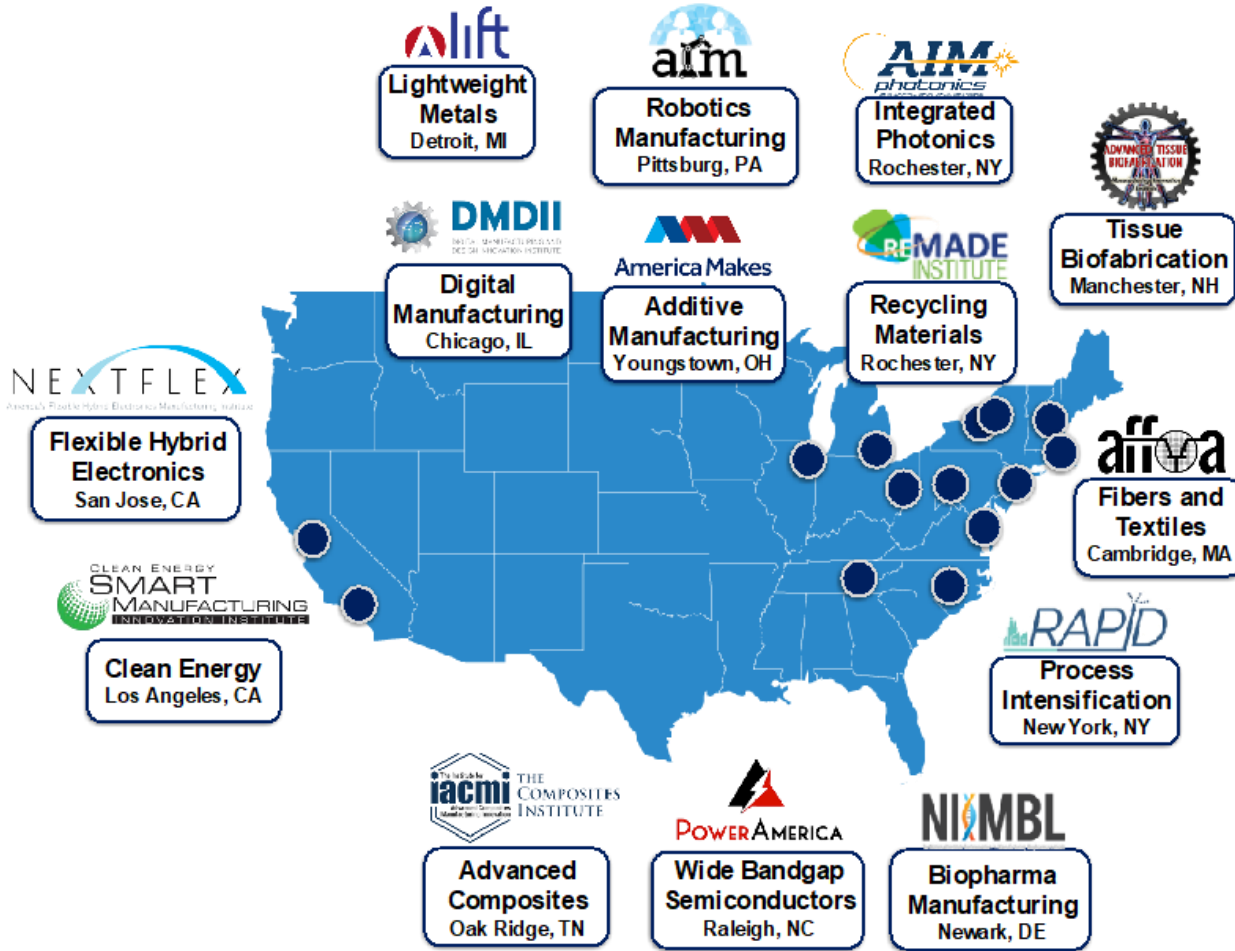




FLEXFACTOR

THE FUTURE OF ADVANCED MANUFACTURING

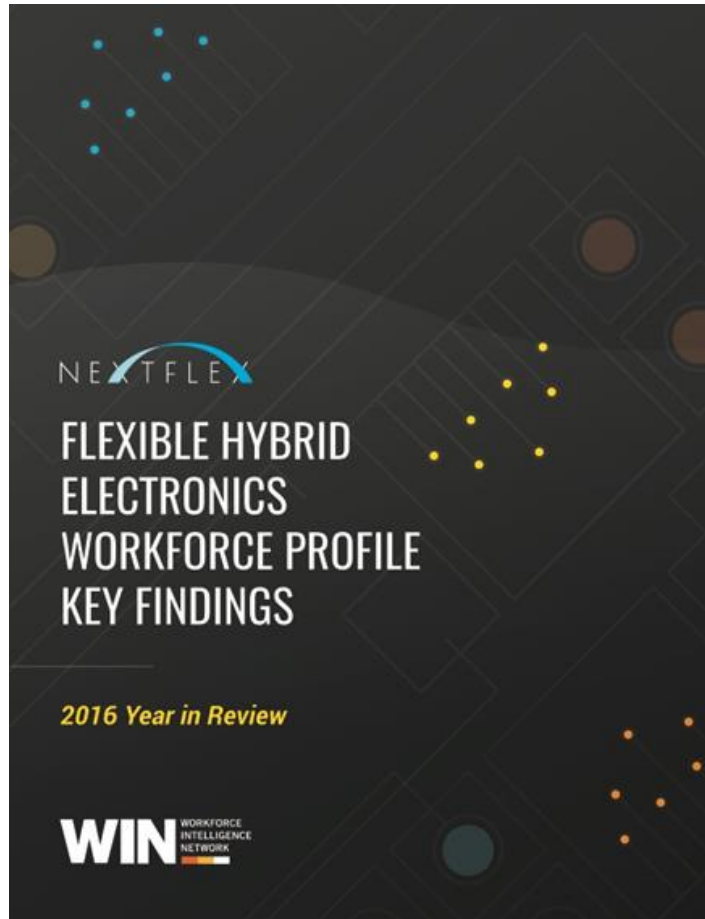
WHAT IS NEXTFLEX?



A network of regional institutes, each with a specialized technology focus.

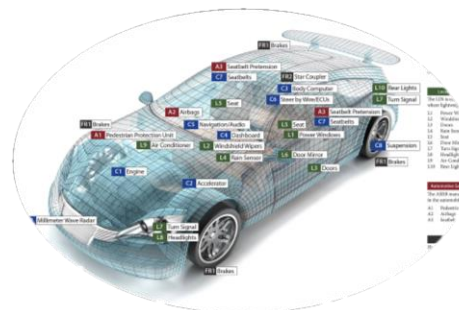
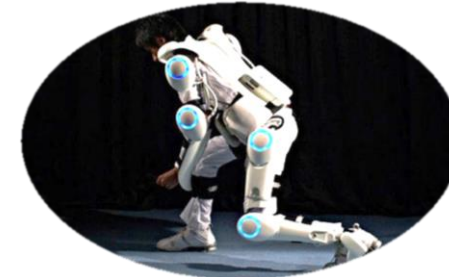
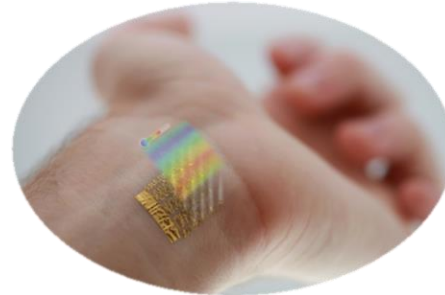
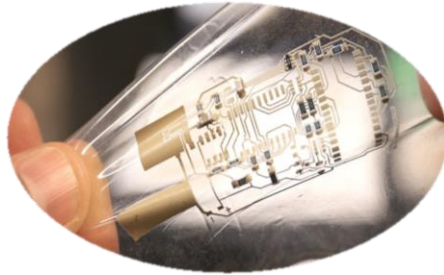
Secure the future of manufacturing in the U.S. through innovation, collaboration and education.

- 14 institutes sponsored by Departments of Defense, Energy, and Commerce
- Over \$1 billion Federal funding matched by over \$2 billion non-Federal funding
- Over 1,300 public / private sector partners
- Represented in 40+ states



- **60 occupations**
- **9,628,062 US workers in 2016**
- **1,442,606 job postings in 2016**
- **\$55,883 average annual salary**
- **22% women**
- **25% are over 55 years old**
- **6% under 24 years old**

START WITH THE PROBLEMS YOU WANT TO SOLVE, NOT THE DEGREE YOU EARN



AN INNOVATIVE APPROACH TO GROW THE FUTURE OF ADVANCED MANUFACTURING



FLEXFACTOR: THE FUTURE OF ADVANCED MANUFACTURING



A RAPIDLY GROWING PROGRAM



Sep 2016
0

Oct-Nov 2016
Lincoln HS
1 x class

8
Jan - June 2017
Calaveras Hills HS (34)
Overfelt HS (37)
Lincoln HS (40)
Willow Glen HS (63)
Wilcox HS (31)
6 x classes

205

Sep 2017 - Dec 2017
Leigh HS (45)
Branham HS (30)
Westmont HS (30)
Wilcox HS (70)
Lincoln HS (70)
Independence HS (70)
Milpitas HS (35)
MetroEd Voc School (70)
13 x classes

420

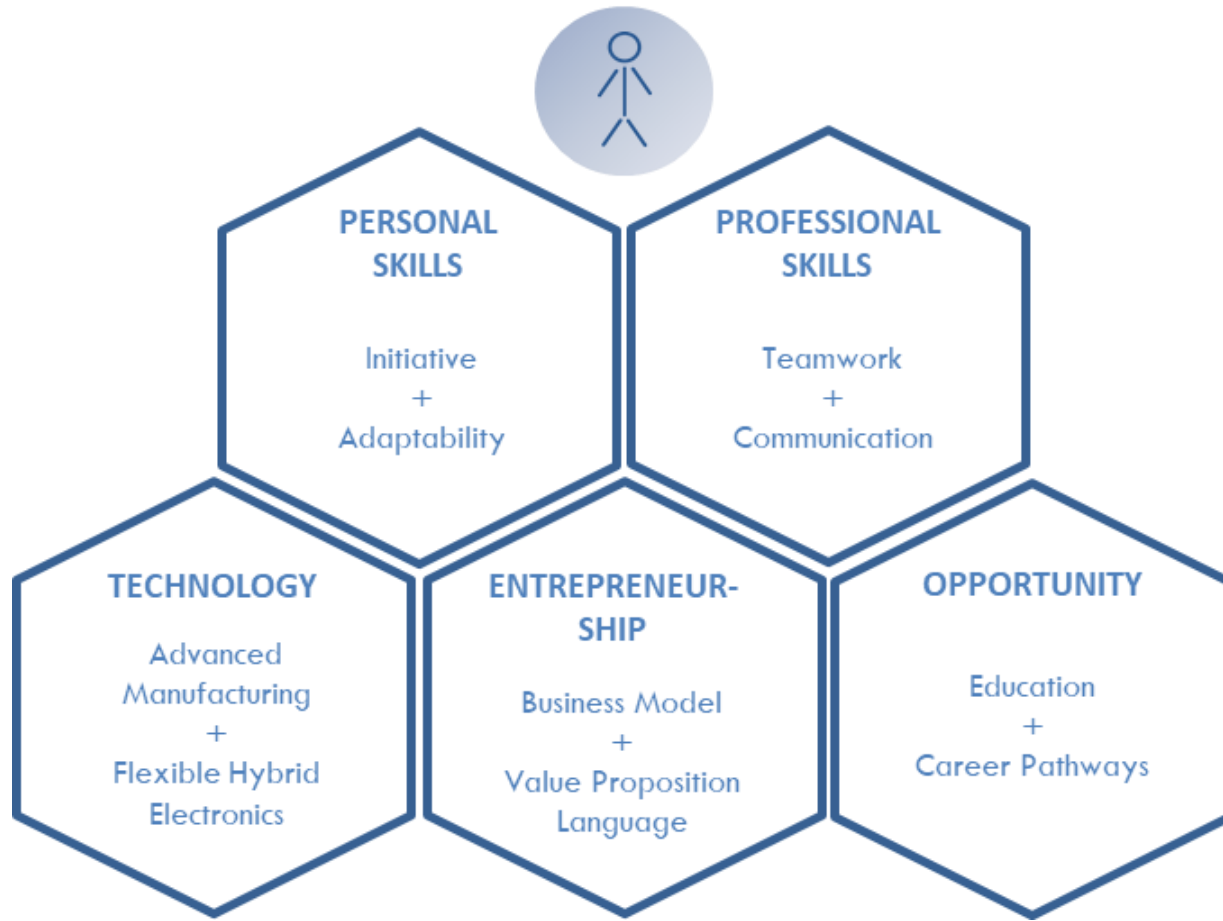
Jan 2018 - June 2018
Wilcox HS (175)
Lincoln HS (70)
Willow Glen HS (140)
San Jose HS (35)
Leland HS (70)
Gunderson HS (70)
Pioneer HS (70)
Overfelt HS (140)
Independence HS (245)
Milpitas HS (35)
Morgan Hill (70)
Gilroy (70)
34 x classes

1,190

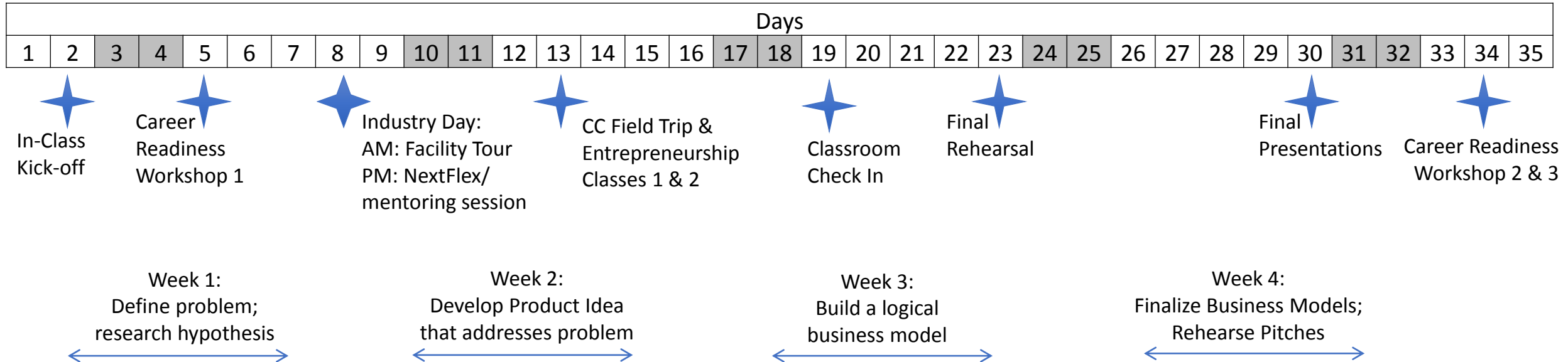
1,823 students
54 classes
455 FHE Product Ideas

HELP EXPOSE STUDENTS TO REAL WORLD PROBLEMS

PROJECT-BASED LEARNING



WHAT YOU ARE GOING TO DO - FOUR WEEKS OF AWESOME



WHAT WILL YOU GET OUT OF THIS PROJECT?



- **A basic understanding of flexible hybrid electronics technology**
- **A basic understanding of entrepreneurship and a business model**
- **Familiarity with an advanced manufacturing working environment**
- **Familiarity with advanced manufacturing education pathways**



FLEXIBLE HYBRID ELECTRONICS (FHE)

WHAT IS FHE?

- **FHE (Flexible Hybrid Electronics) combine the flexibility and low cost of printed electronics on flexible substrates with the performance of Semiconductor devices to create a new category of electronics**



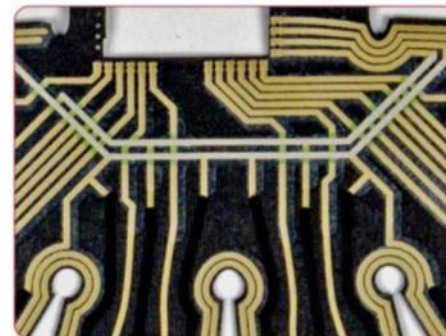
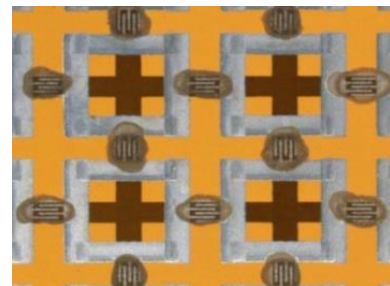
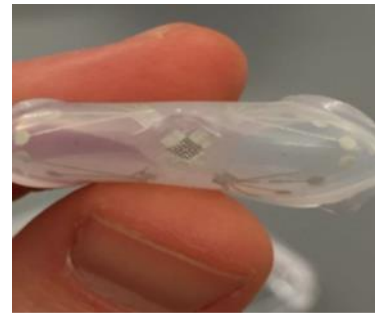
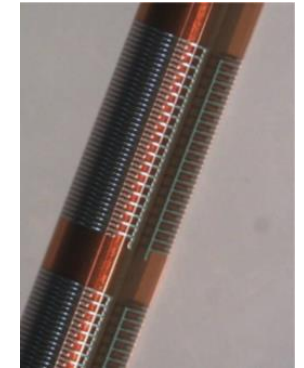
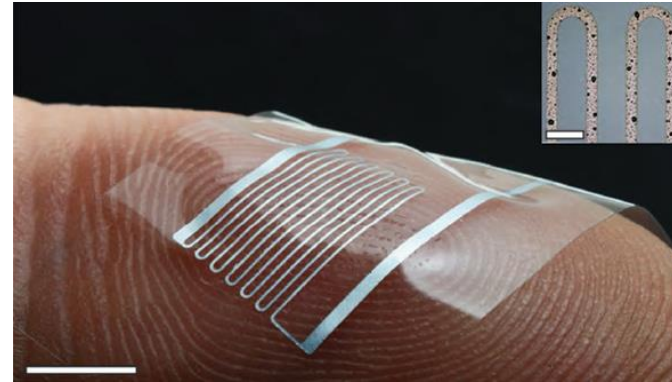
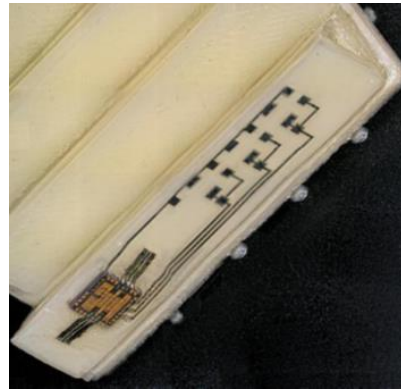
WHY FHE (FLEXIBLE HYBRID ELECTRONICS)?

- **The world is not 2D**
- **Electronics today are rigid and obtrusive**
- **FHEs open a new world of devices that are there but not in the way**
- **Devices made to fit the human body and not the other way**
- **FHE is essential to IoT (Wearables, Industrial IoT, Internet of Aging well things etc)**

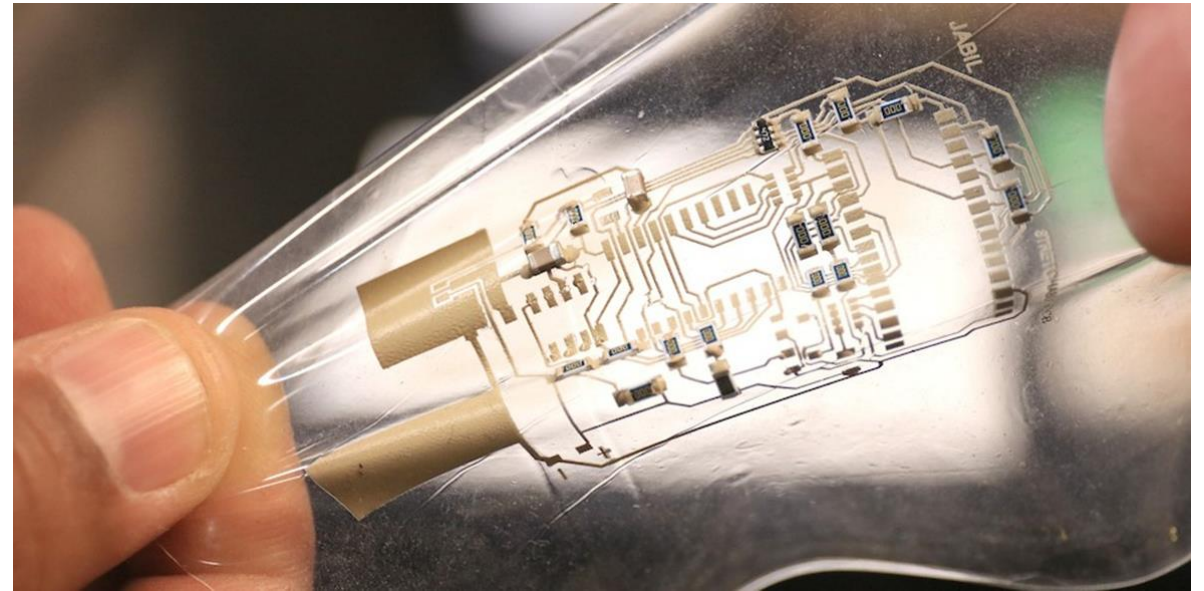
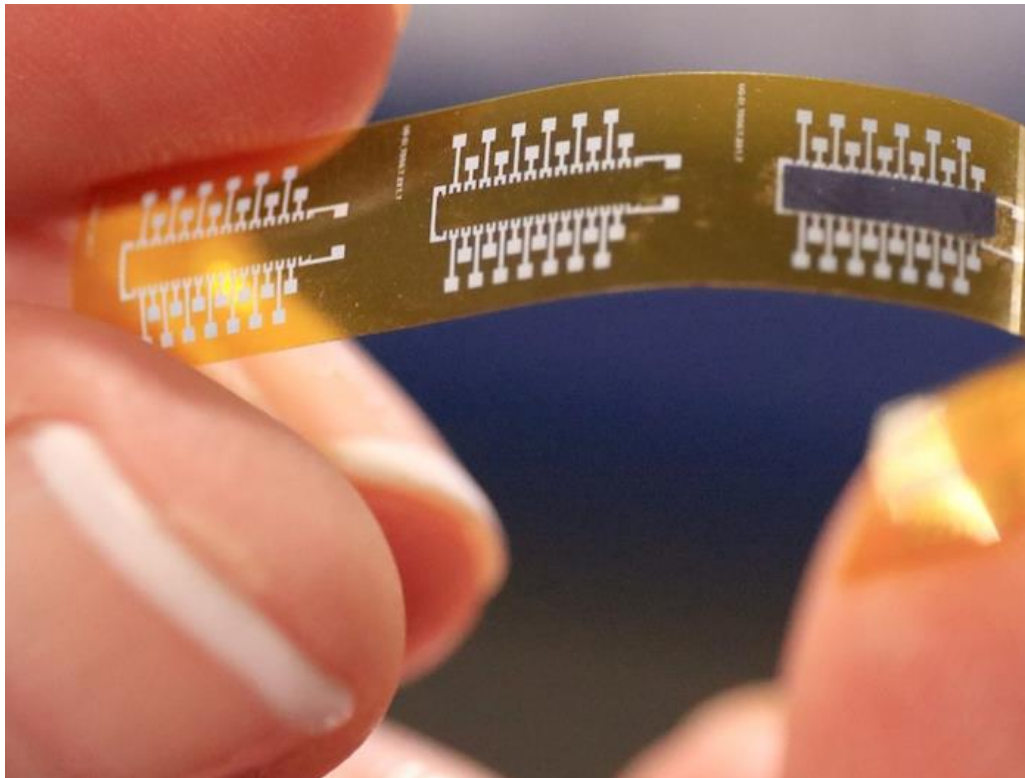


UNIQUE ASPECTS OF FHE

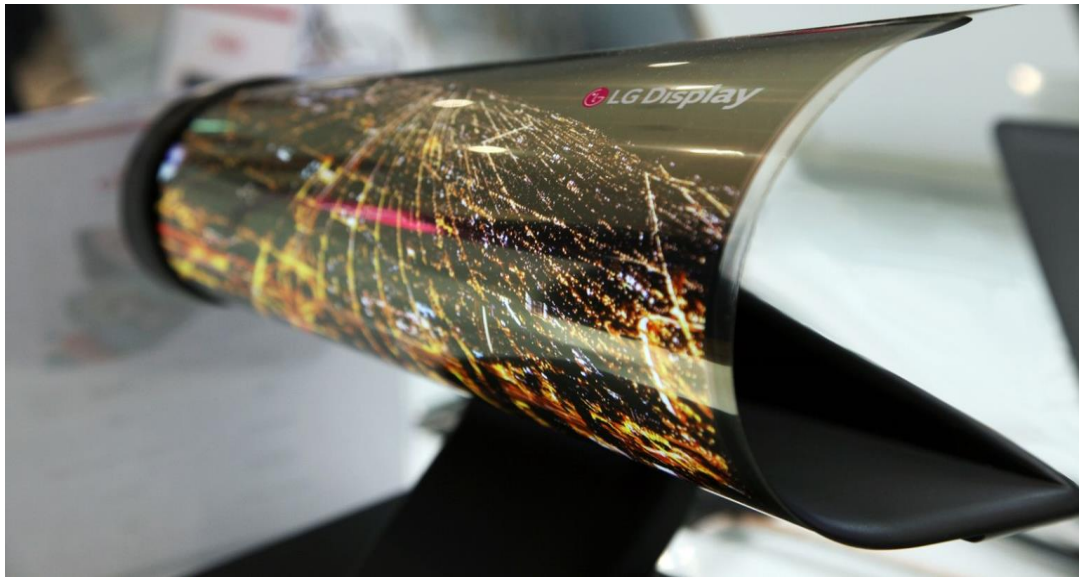
- **Flexible**
- **Stretchable**
- **Conformable**
- **Transparent**
- **Biocompatible**
- **Lightweight**
- **Cost Effective**



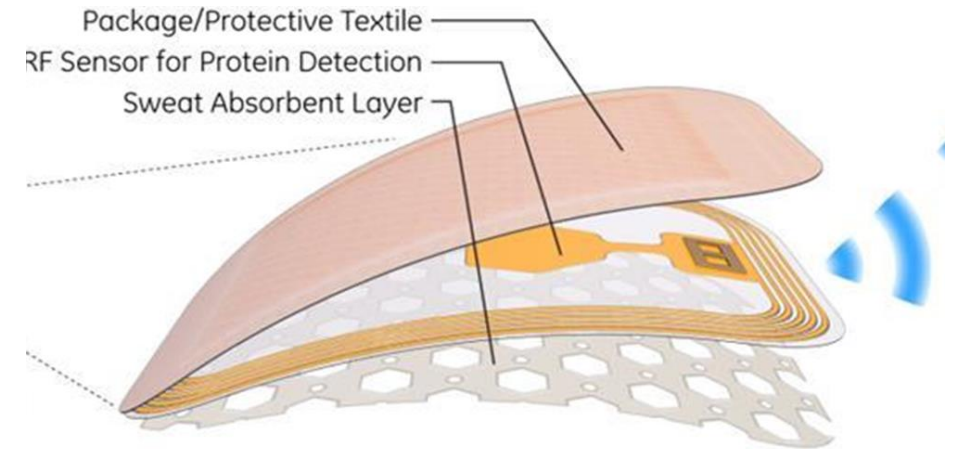
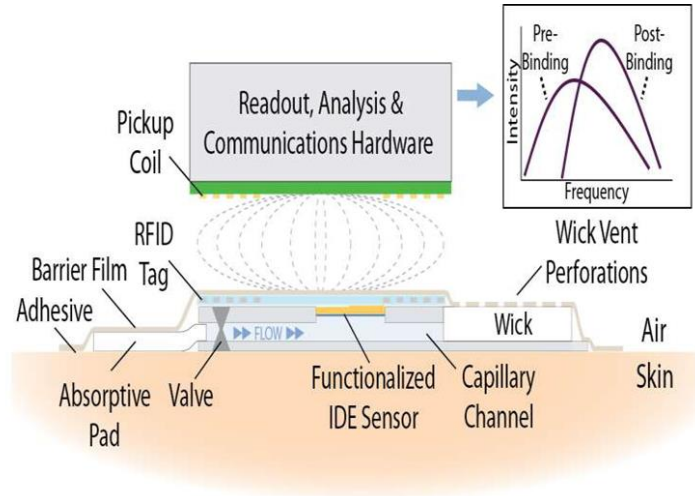
FHE EXAMPLES



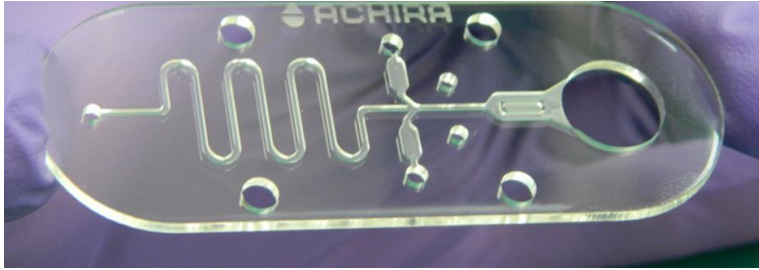
FLEXIBLE / ROLL UP SCREENS



HEALTH MONITORING EXAMPLE WITH MULTIPLE USES



THINGS YOU NEED TO THINK ABOUT WHEN COMING UP WITH A PRODUCT IDEA



Wireless:

Bluetooth, Zigbee,
NFC, WiFi

Microfluidics

MEMS Microphone and speakers

Sensors

Memory

Printed Antennas

Power Source:

Battery, Solar Cell, Supercap, Energy Harvester, Cold Fusion

- Temperature
- Humidity
- Fluids
- Gases
- Physical proximity
- Motion & shock
- Speed
- Elevation
- Vision (Infrared, visual, x-ray)





ENTREPRENEURSHIP

ENTREPRENEURSHIP



Ultimately, ideas are worthless.

**It is your ability to execute a business model
around an idea that makes it valuable.**

So, what is a business model?

Hundreds of definitions but essentially how you connect your value proposition to your customers in a way that allows you to make more money than you spend.

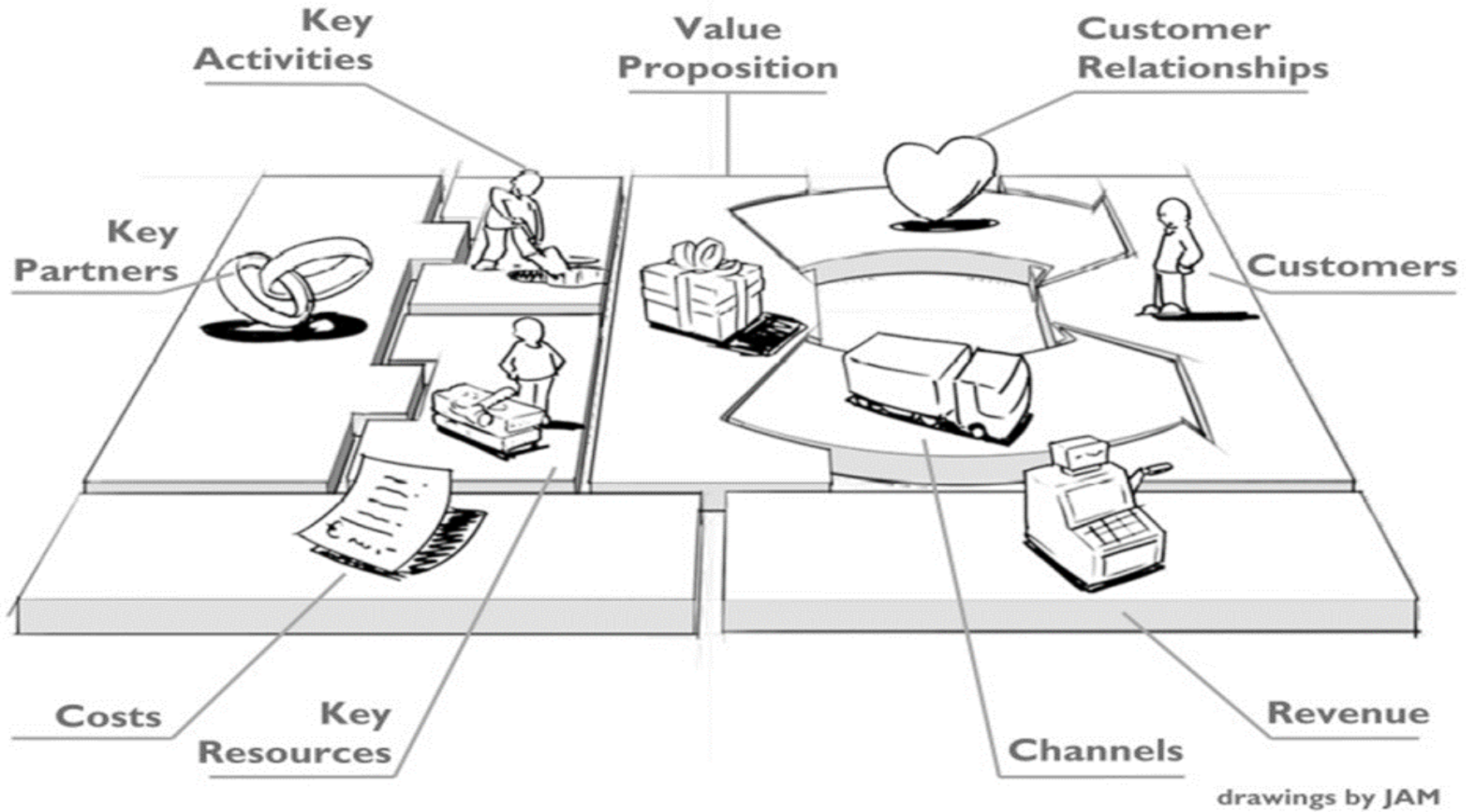
**Clear statement that explains what value
your product/service provides to the
customer**

Two simple videos to explain this further...

[Getting From a Business Idea to a Business Model](#)

[Visualizing Your Business Model](#)

BUSINESS MODEL CANVAS



How to deliver an effective pitch

Breathometer Shark Tank Pitch

- **Form a project team**
- **Think of several problem areas that are interesting to you**
- **Think of several product concepts that would solve those problems**
- **Think of a team name**

THANK YOU