

# WEARABLE COMPUTING

11AM-12PM

**BEACH**  
WOMEN IN  
ENGINEERING

CONFERENCE 2022

CSULB COLLEGE OF ENGINEERING | 100+ Women Strong

#BWIE22

**WEARABLE  
COMPUTING**  
Moderator



**AVA HEDAYATIPOUR**

Assistant Professor, CSULB  
Department of Electrical Engineering

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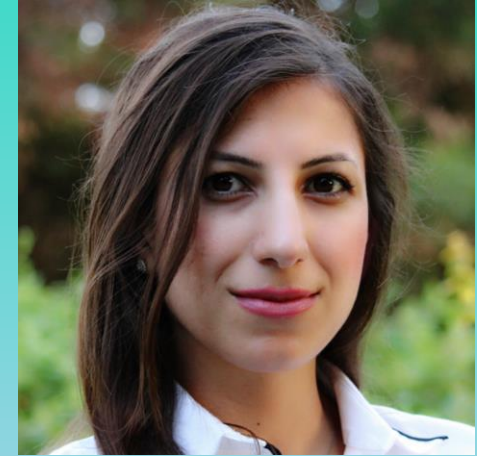
# WEARABLE COMPUTING Speakers



**SUSAN HAYES**  
Electrical Engineer  
Applied Medical



**SAEIDEH  
MOGHAREHABED**  
Algorithm Engineer  
Masimo



**MINA TAHERI**  
Quality Engineer  
Alcon

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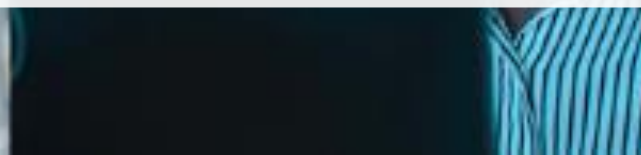
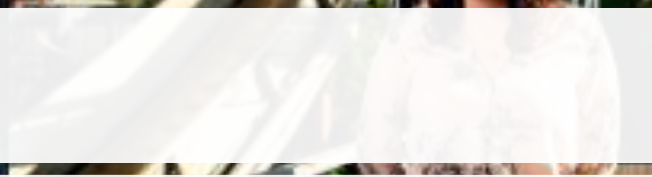
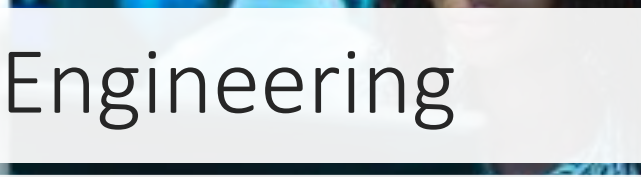
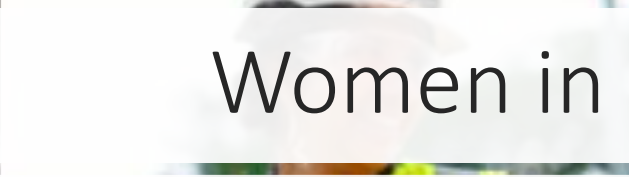
**#BWIE22**

**Susan Haynes**

**Manager of Technology &  
Development Electrical  
Systems**

**APPLIED MEDICAL**





# Women in Engineering



# WOMEN

Claim your space

Uplift women

Build your tribe

Inspire others

Balance

Be Authentic





Claim Your Space  
and make it  
**YOURS!!!**

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Women Helping Women



Tribe.  
Love them  
hard.



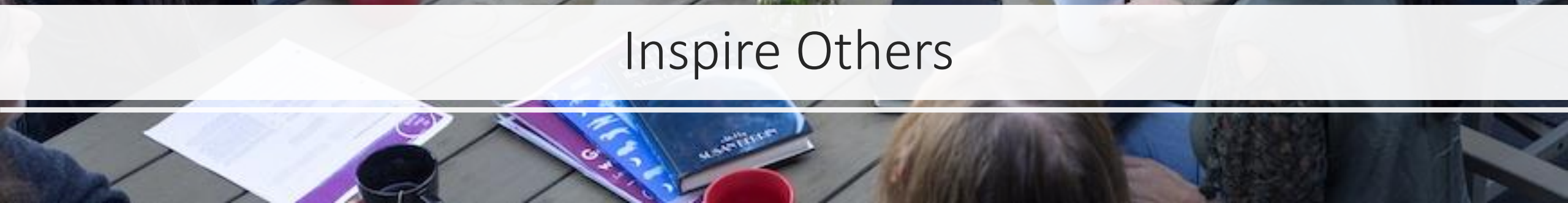
Build Your TRIBE

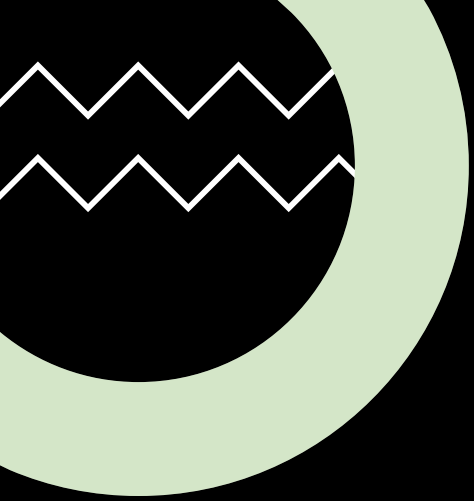






Inspire Others





Balance





Be  
Authentic

NO ONE IS  
YOU

THAT'S YOUR  
SUPERPOWER.

My Alma  
Mater

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# APPLIED MEDICAL | COMPANY OVERVIEW

- Established in 1987
- Approximately 4,000 Team Members
- Over 700 products available in more than 80 countries worldwide
- A New Generation Medical Device Company
- 20 Buildings in SoCal



# APPLIED MEDICAL | OUR MISSION

To Make A Meaningful, Positive Difference in  
the World, Each and Every Day.

# COVID-19 RAPID RESPONSE



APPLIED  
MEDICAL |  
SOCIAL  
RESPONSABILITY







APPLIED MEDICAL  
COMMUNITY  
RELATIONS





APPLIED MEDICAL  
HEALTH AND  
WELLNESS

# APPLIED MEDICAL | WHO WE LOOK FOR

Will you Make A Meaningful, Positive  
Difference in the World, Each and Every  
Day?





# APPLIED MEDICAL | WE ARE HIRING!!!

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[appliedmedical.com/Careers/Engineering](https://appliedmedical.com/Careers/Engineering)

[appliedmedical.com/Careers/Internships](https://appliedmedical.com/Careers/Internships)

Thank You!



**RESEARCH  
BACKGROUND AND  
MOTIVATIONS**

**Saeideh  
Mogharehabet**

**Algorithm Engineer,  
Masimo**

**April 9, 2022**



# Outline

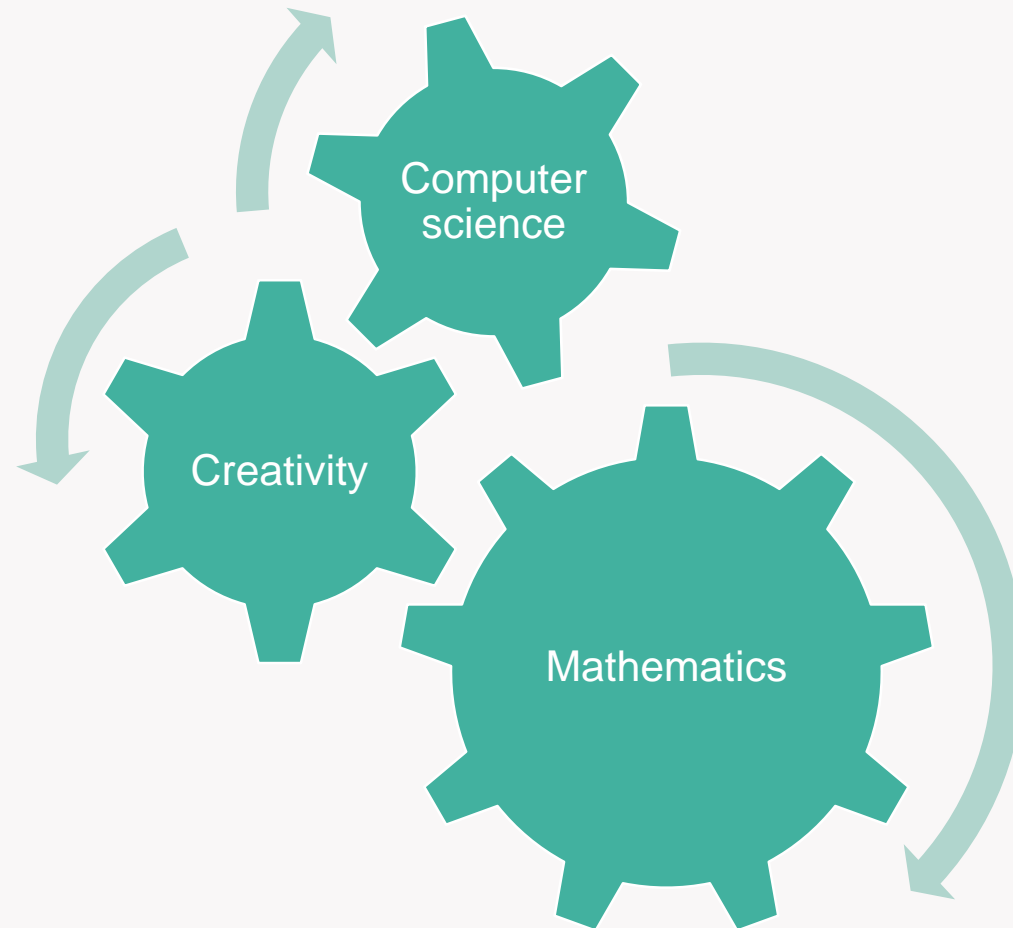
- Education
- Why I became an engineer?
- Why biomedical engineering?
- Research Projects:
  1. Classification of Lung Tissue in HRCT Images of Cystic Fibrosis Patients
  2. Seizure Detection and Emotion Detection Systems Using Physiological Signals
  3. Detection and Prediction of Delirium

# Education

- **BSC in Electrical Engineering**
- **MSC in Biomedical Engineering**
- **MSC in Electrical and Computer Engineering**

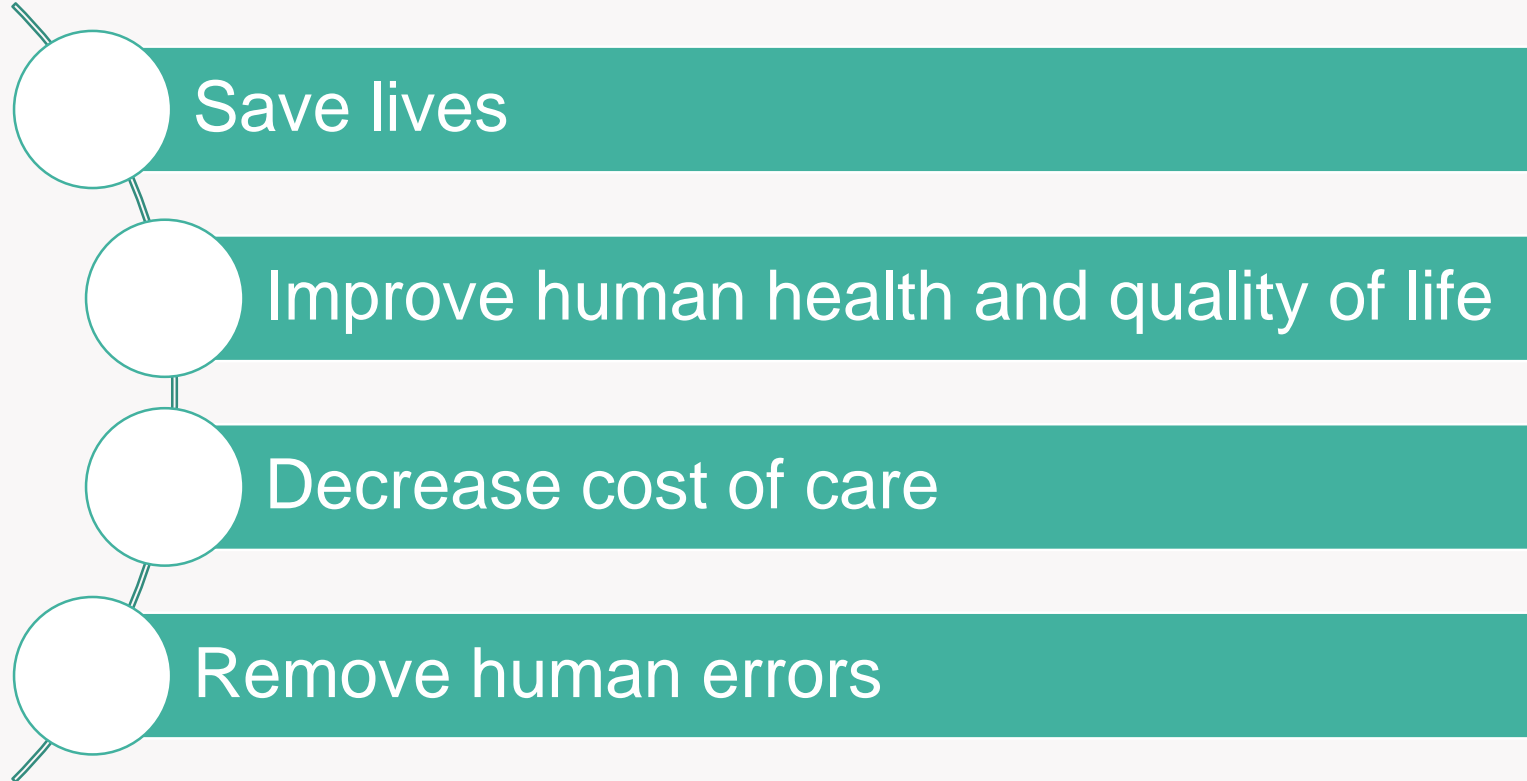


# Why I became an engineer?





# Why biomedical engineering?

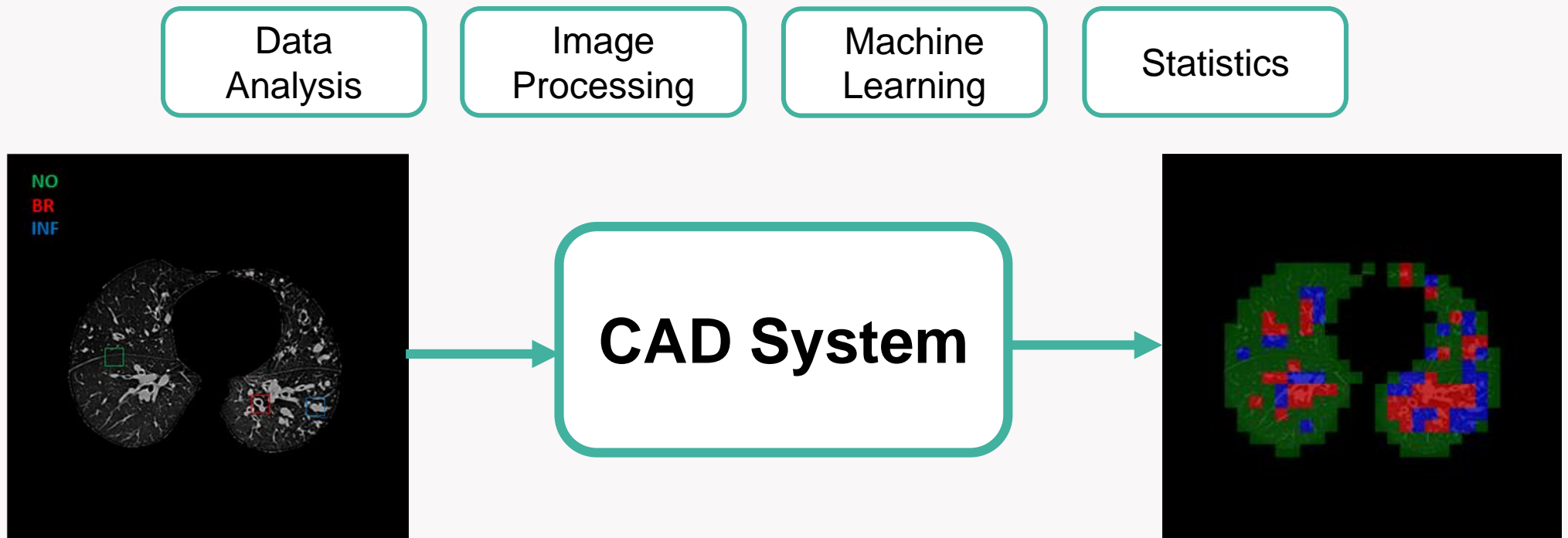
- 
- Save lives
  - Improve human health and quality of life
  - Decrease cost of care
  - Remove human errors



# RESEARCH PROJECTS



# Classification of Lung Tissue in HRCT Images of Cystic Fibrosis Patients



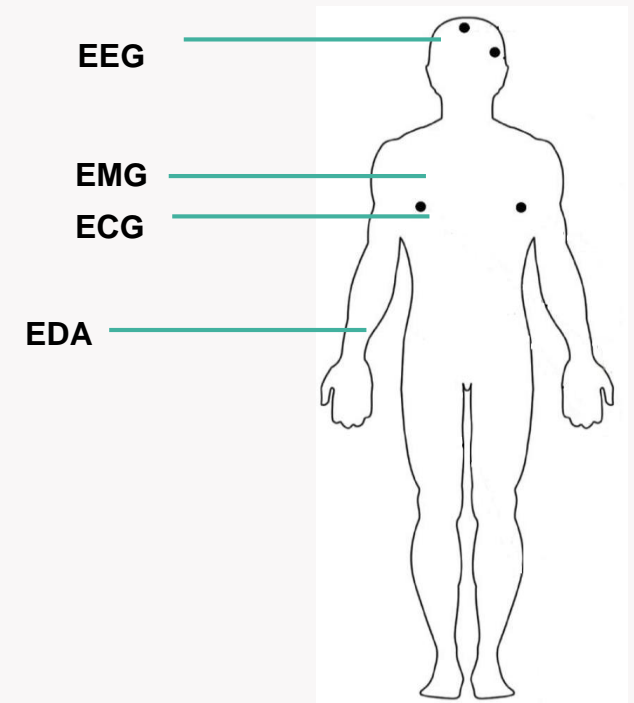




# Seizure Detection and Emotion Detection Systems Using Physiological Signals

## Biosignals:

- ❑ Generated by electrochemical changes within and between cells such as nerve, muscle or heart cells.
- ❑ Contain information about the living part of body such as brain waves, heart activity, muscle tension, electrodermal activity of skin and etc.



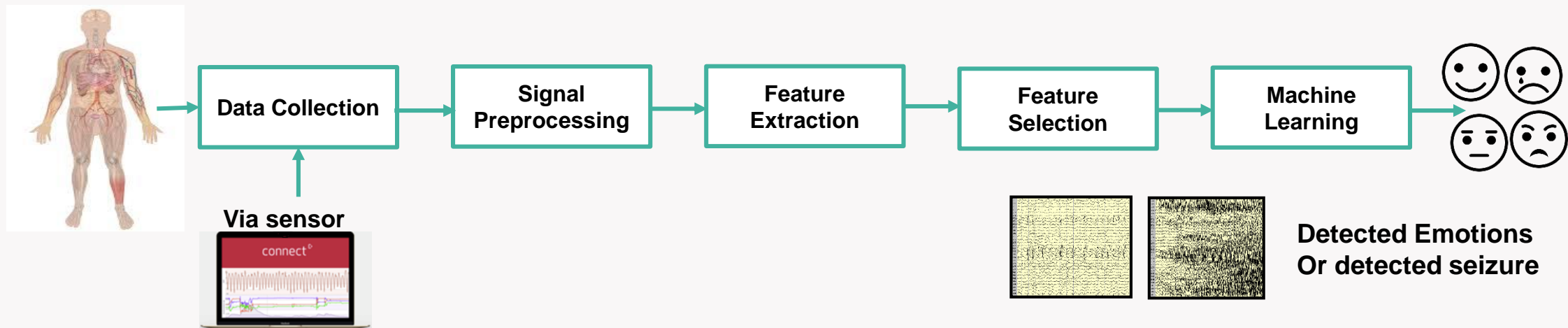
# Seizure Detection and Emotion Detection Systems Using Physiological Signals

## Emotion/Seizure Detection:

**Intuition:** Biosignals can be used to understand the underlying physiological mechanisms of a specific biological event

**Emotional states:** happiness, sadness, fear, disgust, surprise, neutral

**Seizure states:** Normal EEG and abnormal EEG



# Masimo Wearable Devices

**SpHb<sup>®</sup>**  
Noninvasive  
and Continuous  
Hemoglobin



**PVi<sup>®</sup>**  
Pleth Variability  
Index



**O3<sup>®</sup>**  
Regional  
Oximetry



**SedLine<sup>®</sup>**  
Brain Function  
Monitoring

Root<sup>®</sup> Patient Monitoring and Connectivity Platform





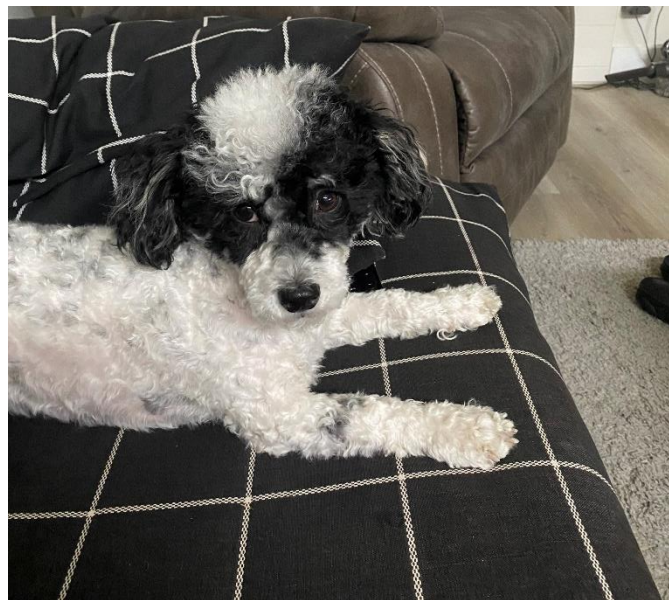
THANK YOU



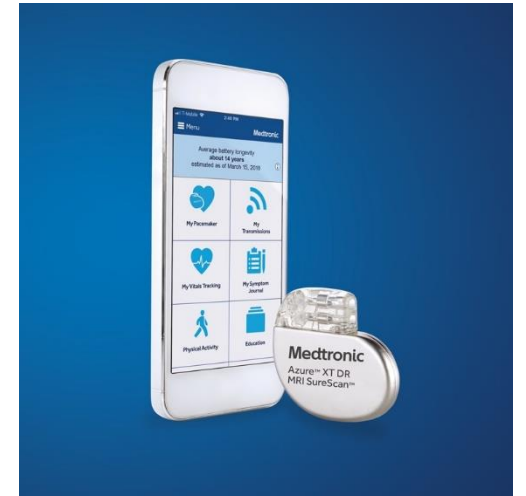
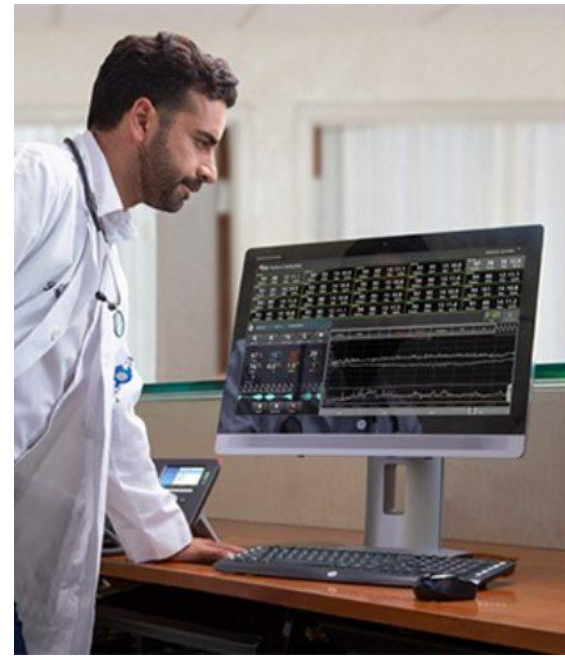
# BEACH WOMEN ENGINEERING CONFERENCE

Prepared by **Mina Taheri**  
**April 2022**









Quality Engineer are protecting patients by ensuring the delivery of only safe, effective and reliable medical device.

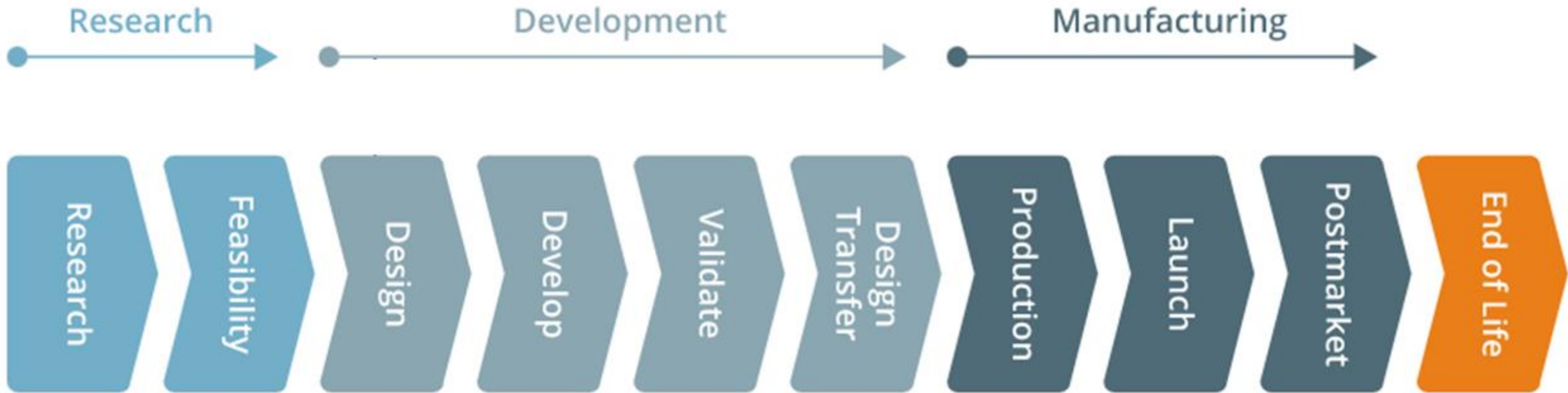


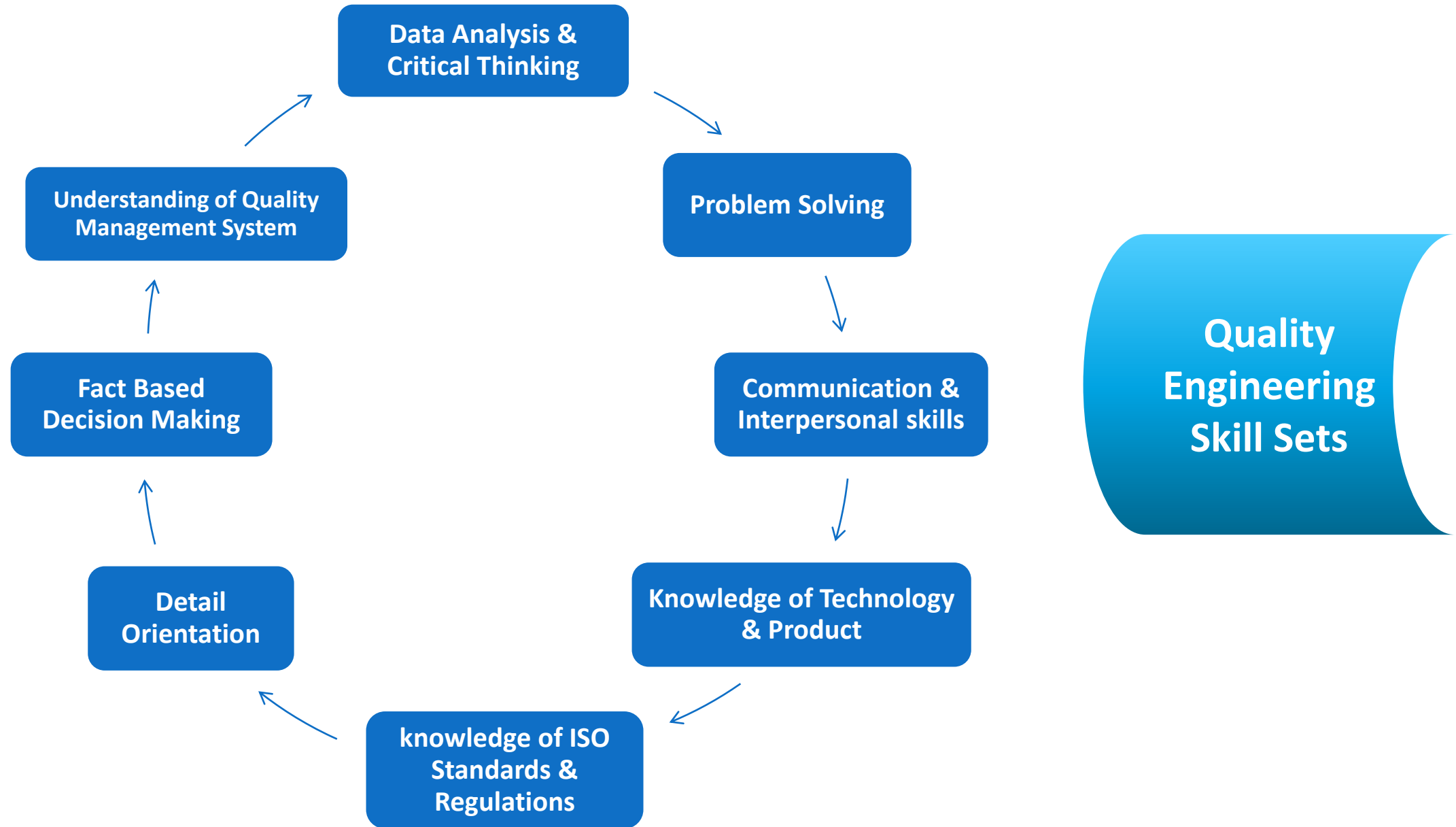
They are closely collaborating and coordinating with R&D, Process engineers and manufacturing engineers to achieve this goal and maintain Quality Management System.





# Life-cycle of Medical Device & QE Roles





# WEARABLE COMPUTING

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<https://bit.ly/BWIE-S4>



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