



# Sleep sensing

*Letting you learn what you do  
when you don't know  
what you do for 8 hours*

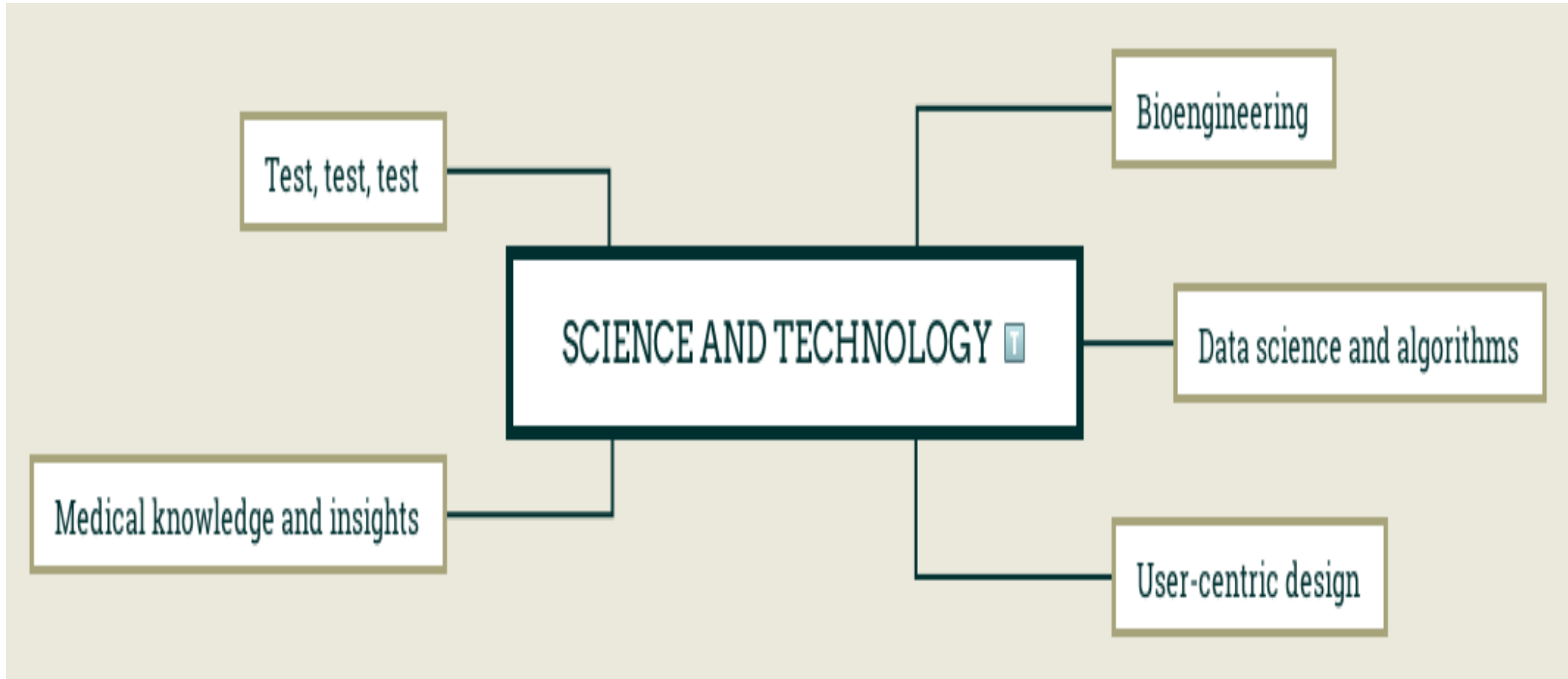


# Zansors is...

- A personal health analytics company
- Helping you **know yourself**
- Using **tools, not toys**
- Creating **evidence-based products**



# Zansors is ...



# Sleep, the next frontier

- When you sleep, you can't observe yourself
- You need tools to learn about your sleep
- We recognize that sleep is extremely important to health



# Sleep problems

- Apnea
  - over 80% undiagnosed
  - Implicated in heart disease, heart failure, stroke
  - Obvious impact on productivity
  - **How do you comfortably measure apnea?**
- Insomnia
  - **How do you know how much you've really slept?**
- Snoring
  - Risk for high blood pressure
  - Impacts during pregnancy
  - Treatable.



# Sleep apnea, or not breathing for a while

- Not breathing for at least 10 seconds, at least 5-10 times per hour
- Need to figure out if you're doing it
- Usually bed partner complains of snoring and disturbed sleep
- No one really wants to get tested
  - Costs \$1-3 K



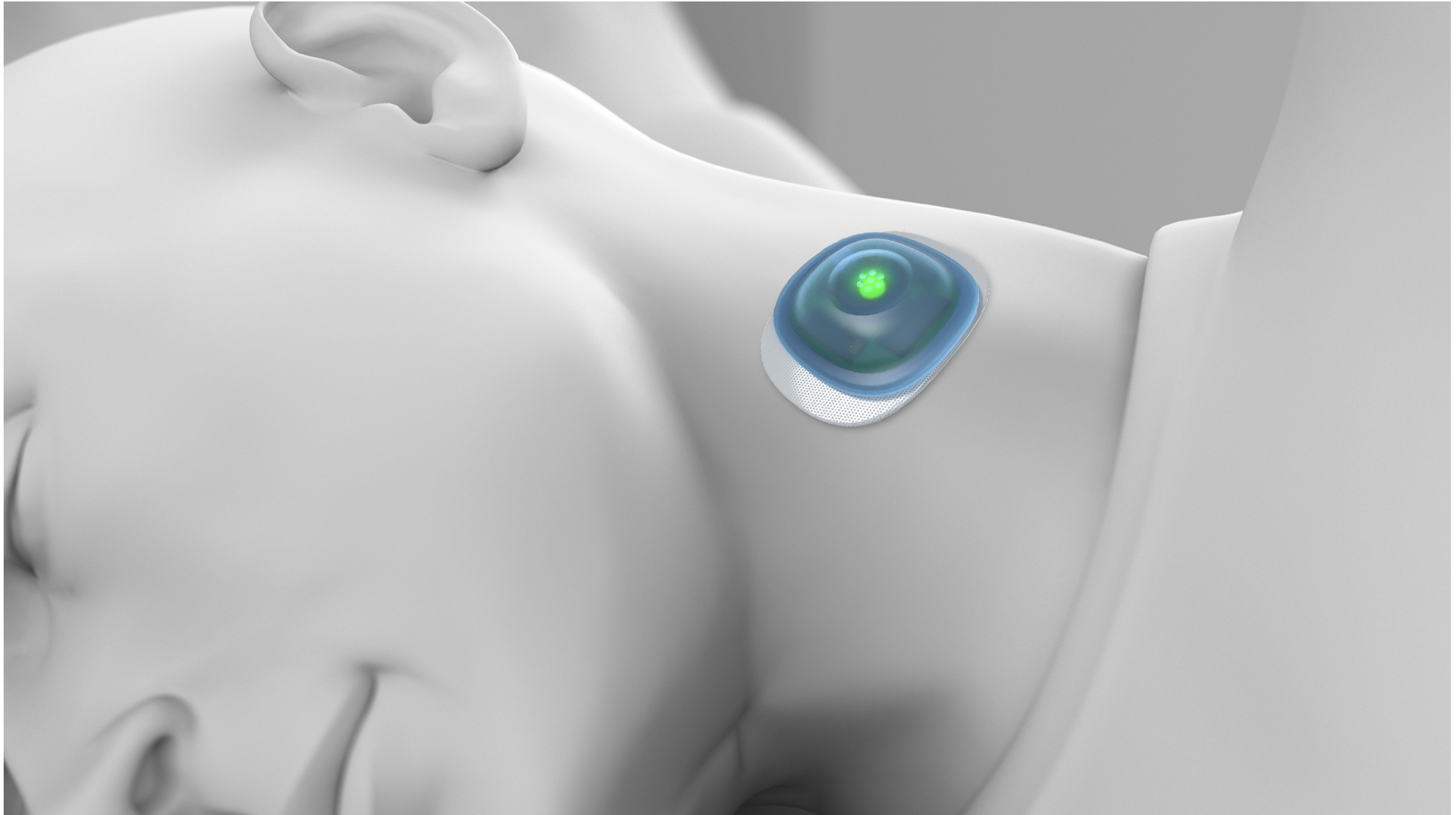








# New world of sleep screening

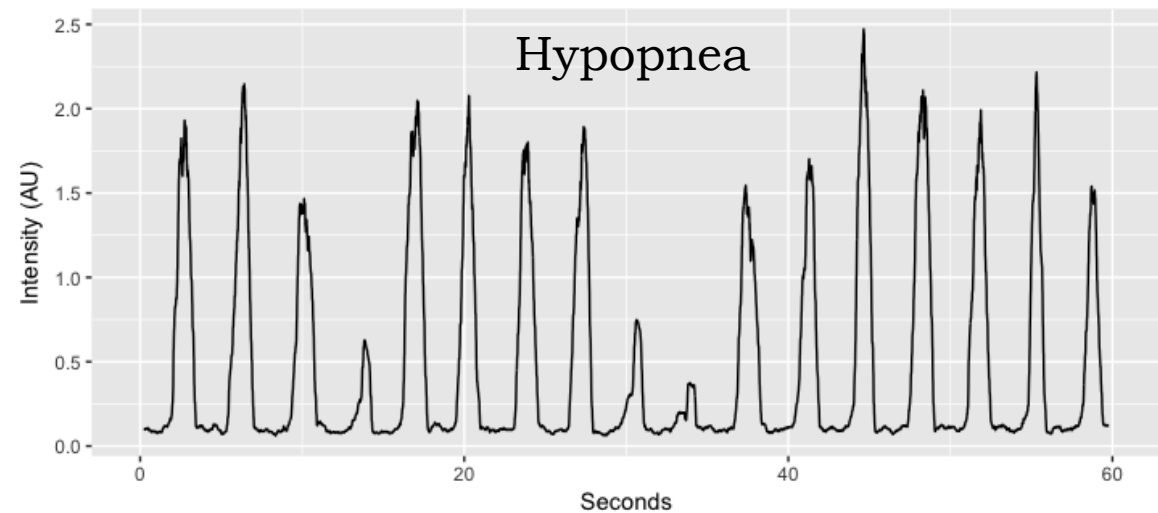
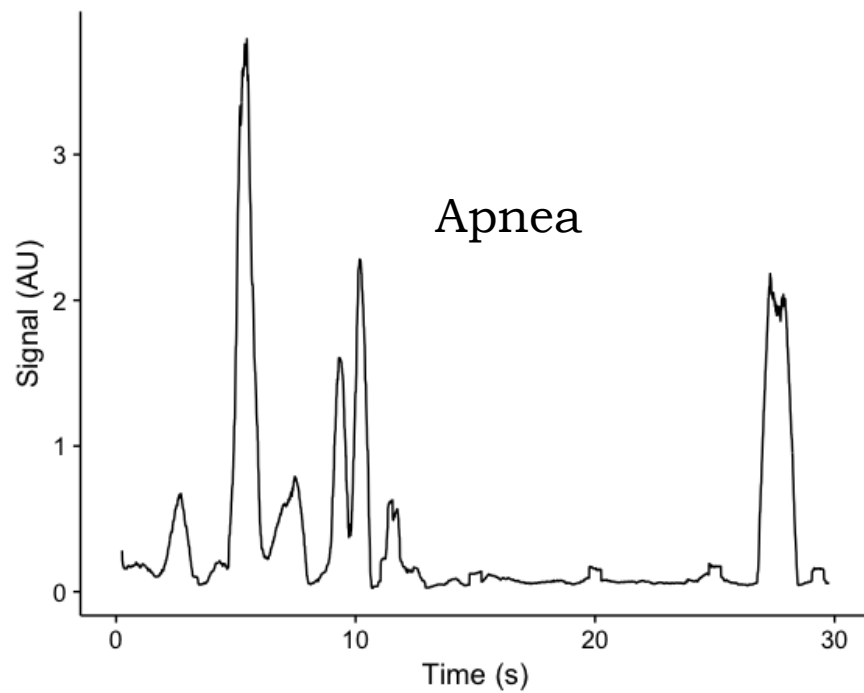


# New world of sleep screening

- Recording sleep “in the wild”!!
- Using sound and motion
- Leveraging signal processing and algorithms
- Bluetooth connectivity
- Potential for other sensors



# Looking for signatures



# Test, Test, Test

- Based on NIH/NIMHD STTR funding (Phase I + II)
- Collaborating with University of Michigan Sleep Center
- Going head to head with
  - Polysomnography (inpatient sleep study)
  - Home sleep testing
- Phase I showed 80% specificity to detect apneas (50+ patients)
- Phase II will look at 100+ patients
  - Accuracy
  - Usability



# Insomnia

- How efficiently you sleep is crucial
- Need to know when you go to sleep, when you wake up
- **How do you do that yourself?!!**





# Insomnia

- Next generation treatment delivery
- Cognitive behavioral therapy
- Through mobile apps



# Our playground

- Alcohol and drug sensing (funded by NIAAA)
  - Blood
  - Sweat
- Microneedle glucose monitoring in neonates (funded by NICHD)
- Smoking tracking and cessation apps
- Secure telemedicine and analytics (funded by NCI)



# Our vision and path

- Create tools, not toys
- Make sure we can ensure quality and trust through validation and peer review
- Create quality, reliable, accurate products



# Our vision and path



**ZANSORS®**  
PERSONAL HEALTH ANALYTICS

Know Yourself

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