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# Advancing Translational Research at the UMass Amherst Center for Personalized Health Monitoring

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IALS

# Institute for Applied Life Sciences

*Advancing Life Sciences Research to Improve Human Health*

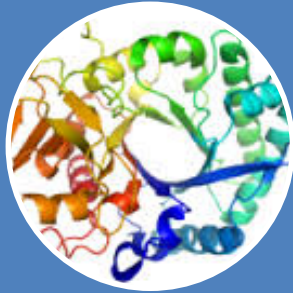
## **Advancing Translational Research at the UMass, Amherst Center for Personalized Health Monitoring**

**Patty S. Freedson, PhD, Moderator**  
**Department of Kinesiology**

**UMMC Research Retreat**  
**May 20, 2016**



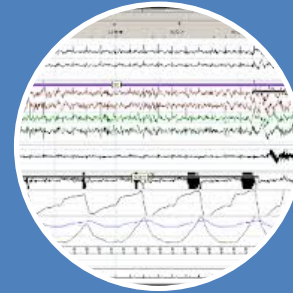
# Institute of Applied Life Sciences



**Models to  
Medicine**



**Bioactive  
Delivery**



**Center for  
Personalized  
Health  
Monitoring**



## **IALS was seeded with Capital Investments**

- **New Building (LSL, >\$50M)**
- **Building fit-out (>\$30M)**
- **Core Facility Equipment (>\$50 M)**
- **Faculty hires and startups (~12 new positions)**

## **Research programs from more than 100 UMass faculty within the three Centers**

### **Leverage existing organizational infrastructure**

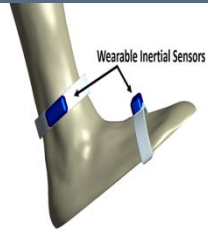
- **Tech Transfer / IP – Bob McWright & team**
- **UMII – Jim Capistran & team**
- **Research Development – Loren Walker & team**
- **Development efforts – Jeff Aron, Will Melton, Chelsea Gwyther**
- **Med School and Center for Clinical & Translational Science – Katherine Luzuriaga**
- **Berthiaume Center for Entrepreneurship – Bill Wooldridge**

## **IALS is a new type of academic/industry institute**

**Its mission is to accelerate translational life science projects, with the goal of delivering products to benefit human health and well-being**

**This vision will be achieved by:**

- **Establish translational collaborations across UMass Amherst and the UMass Medical Center**
- **Prioritize a pipeline of translational projects**
- **Create relationships and collaborations with industry partners**
- **Develop new products and technologies by utilizing existing and combined strengths at UMass**
- **Train a workforce skilled in translational science**



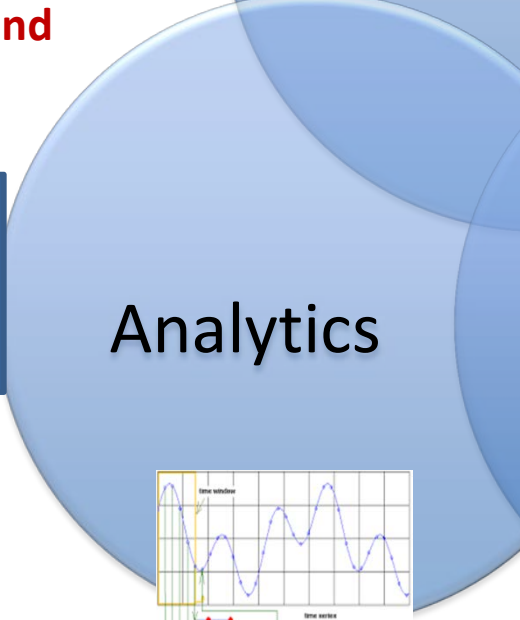
**Engineering, Polymer Science,  
and Computer Science**

- Sensor Development
- Low Cost & Additive Manufacturing
- Medical Robotics
- Medical Device



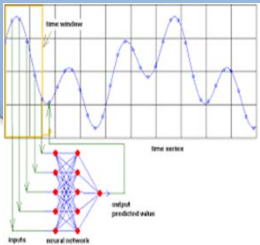
**Computer Science and  
Mathematics and  
Statistics**

- Software Engineering
- Big Data



**Kinesiology,  
Engineering,  
Psychological and  
Brain Sciences,  
Nursing & Public  
Health**

- Sensor Performance
- Health Outcomes
- Healthcare Engineering





## ■ Evaluation and Applications

- Muscle function, aging and exercise – Mark Miller, PhD, **UMass Department of Kinesiology**
- Detecting and monitoring objective signs of cancer-related fatigue –Rachel Walker, PhD, **UMass Amherst School of Nursing**
- Community and environmental determinants of sleep in children –Carolina Campenella, PhD, **UMass Amherst Department of Psychological and Brain Sciences**
- Effects of fluid flow on vascular disease and development -Juan Jimenez, PhD, **UMass Amherst Department of Mechanical and Industrial Engineering**