



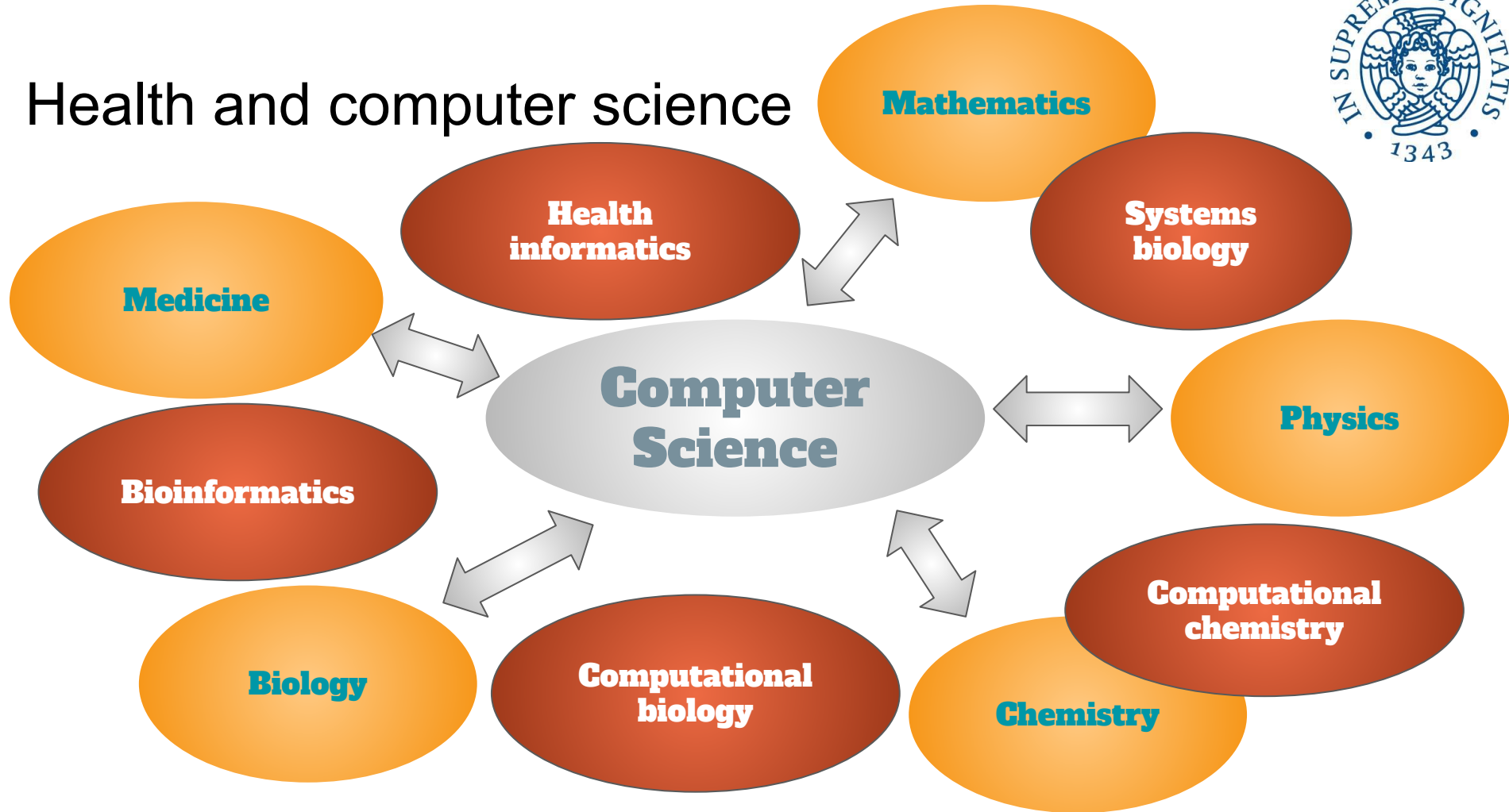
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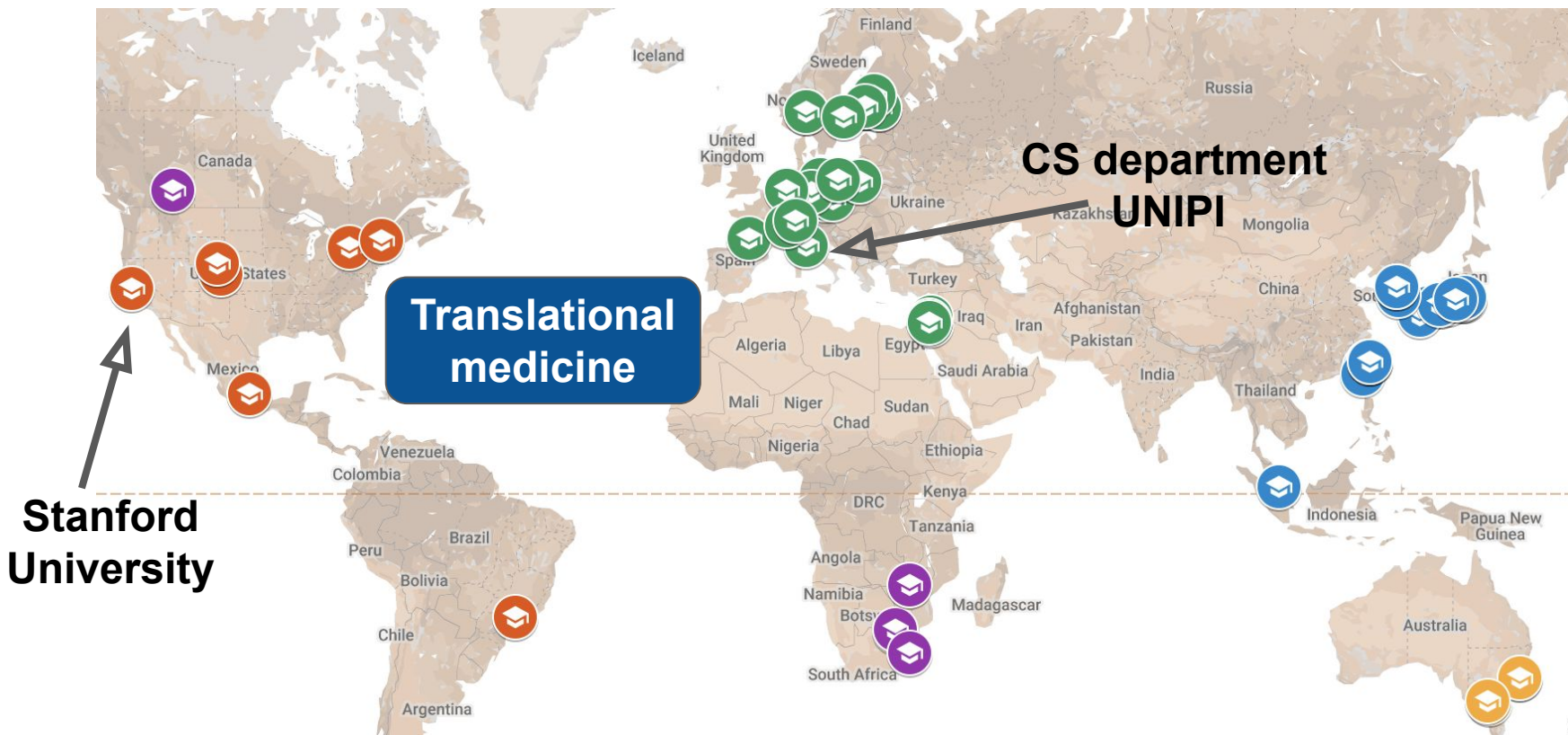
# Computational Health at UNIFI

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# Health and computer science





# Pediatric Acute-onset Neuropsychiatric Syndrome (PANS)



- Recently classified disease - children suddenly develop tics, obsessive behaviour, fears, sleep and eating disorders

**Psychological?**

**Bacterial infection?**

**Mechanisms of the disease still unknown!**

**Metabolomics**



**Proteomics**

**Clinical history**



**Biomarkers**

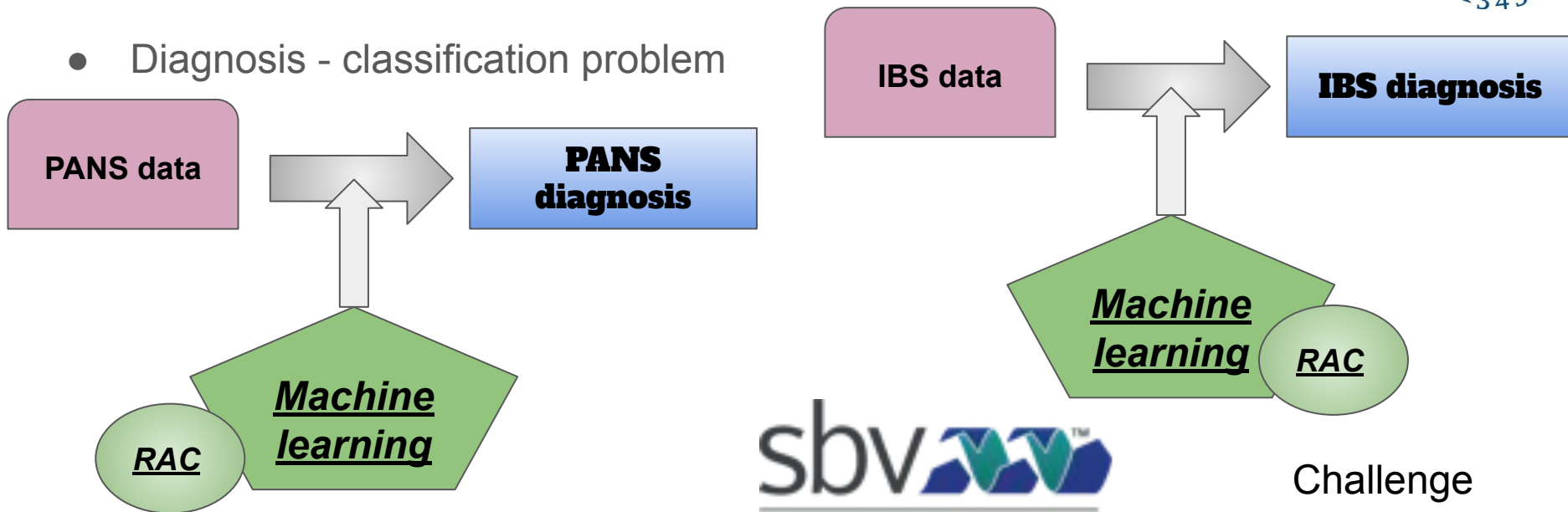
**Mechanisms**

**Better therapy**



# Machine learning for disease diagnosis

- Diagnosis - classification problem



Challenge  
deadline 15th  
January

# Sleeping patterns and health

**Food**



**Wrist band data**



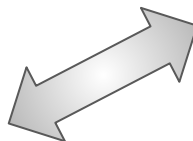
**Sleep quality**



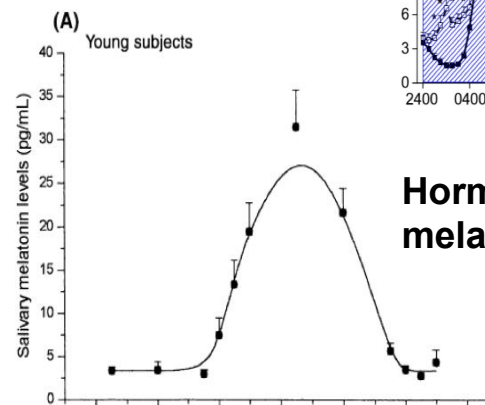
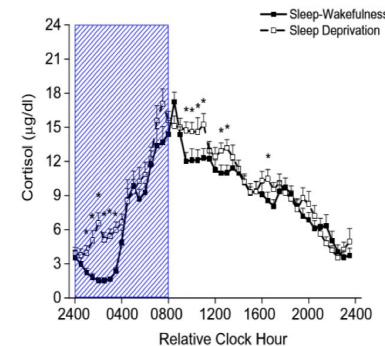
**Stress, feelings**



**Activity**

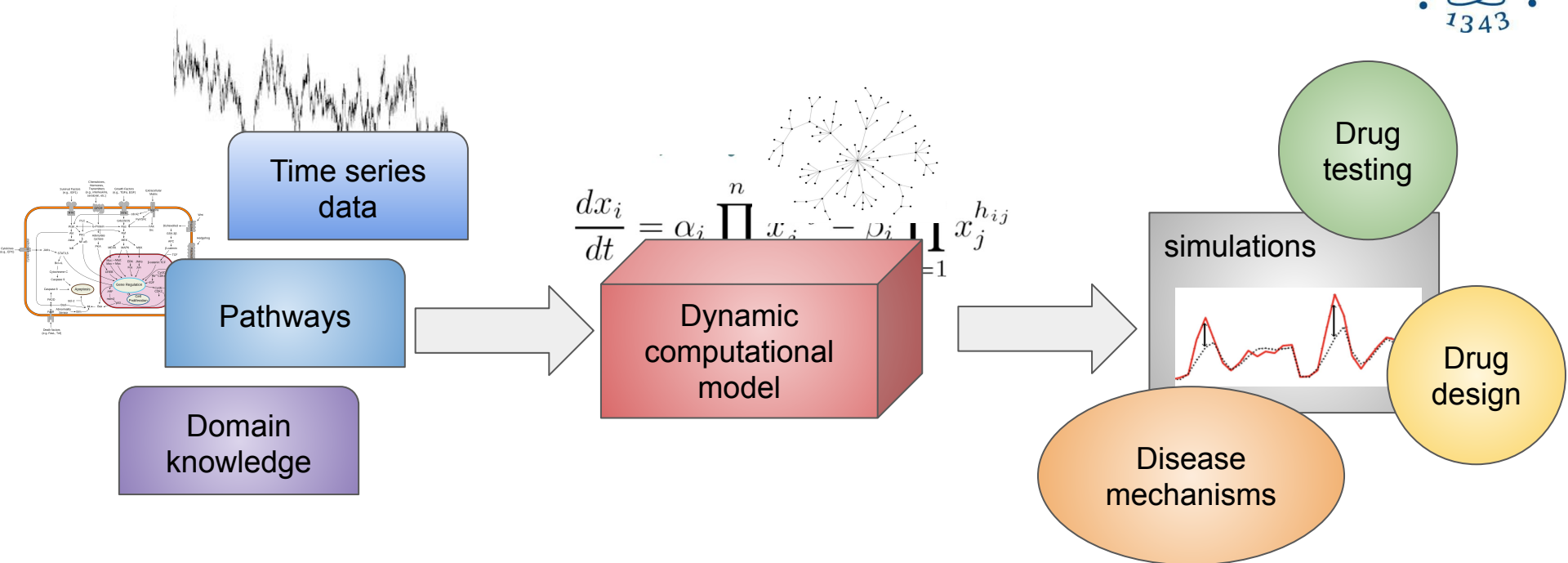


**HOW DO THEY ALL WORK TOGETHER?**



**Hormones: cortisol, melatonin, ..**

# Dynamic models for health







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