

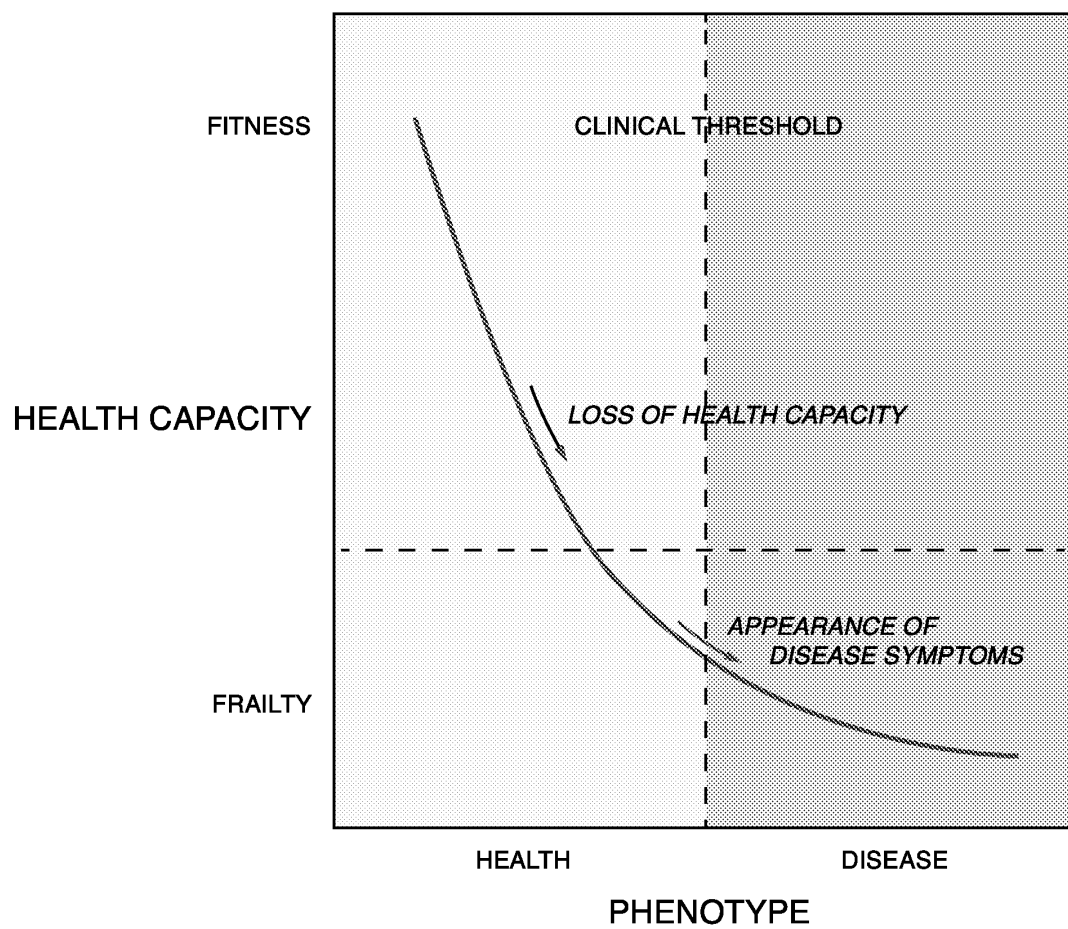


FIG. 1

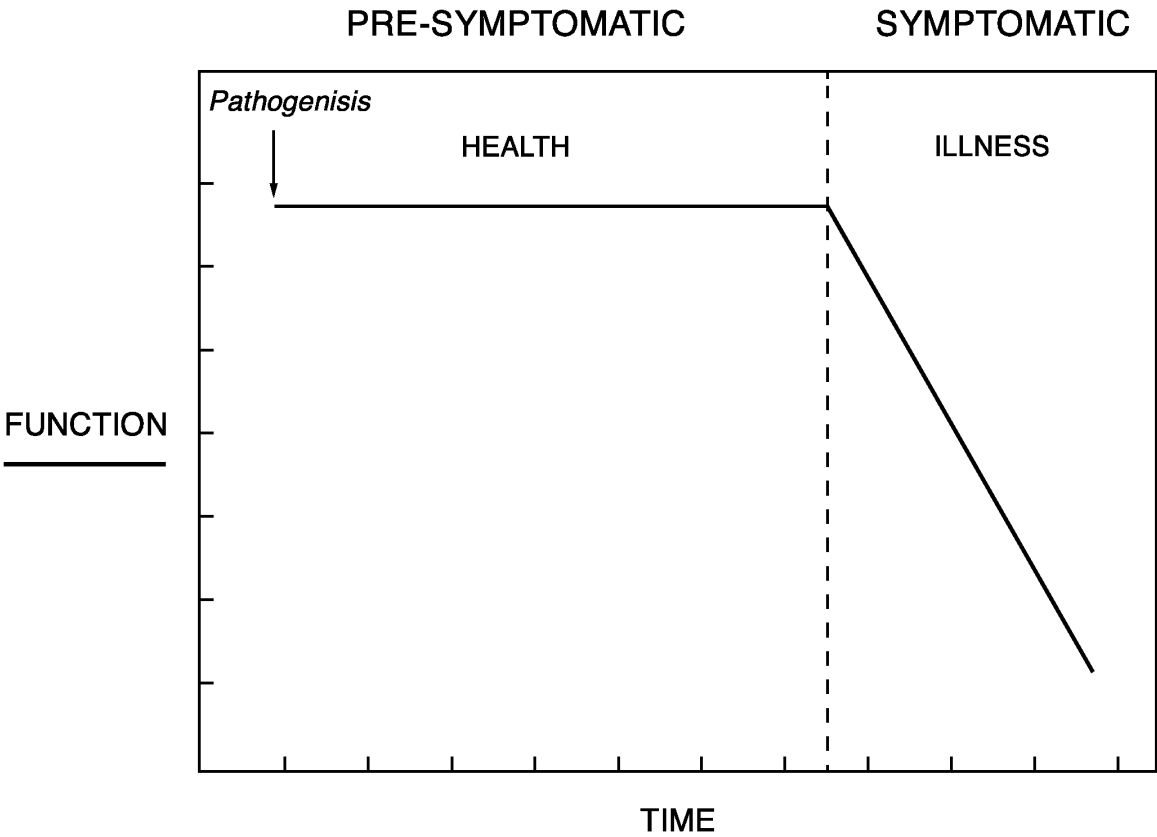
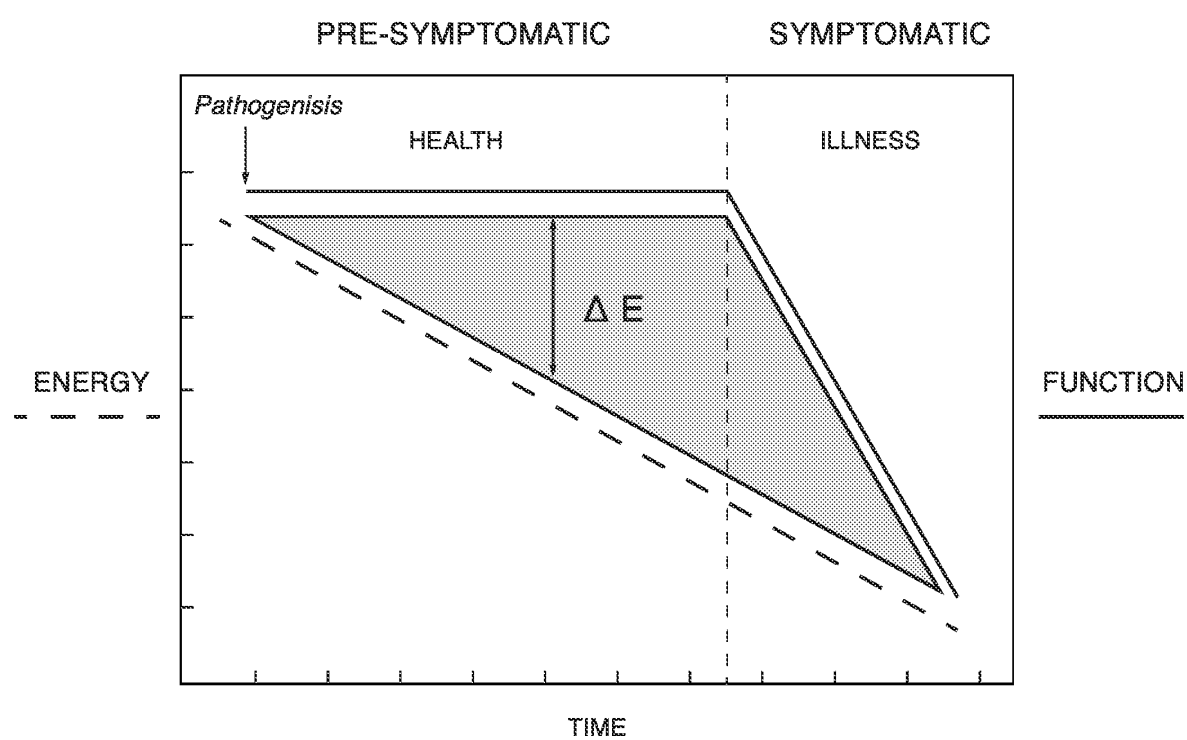
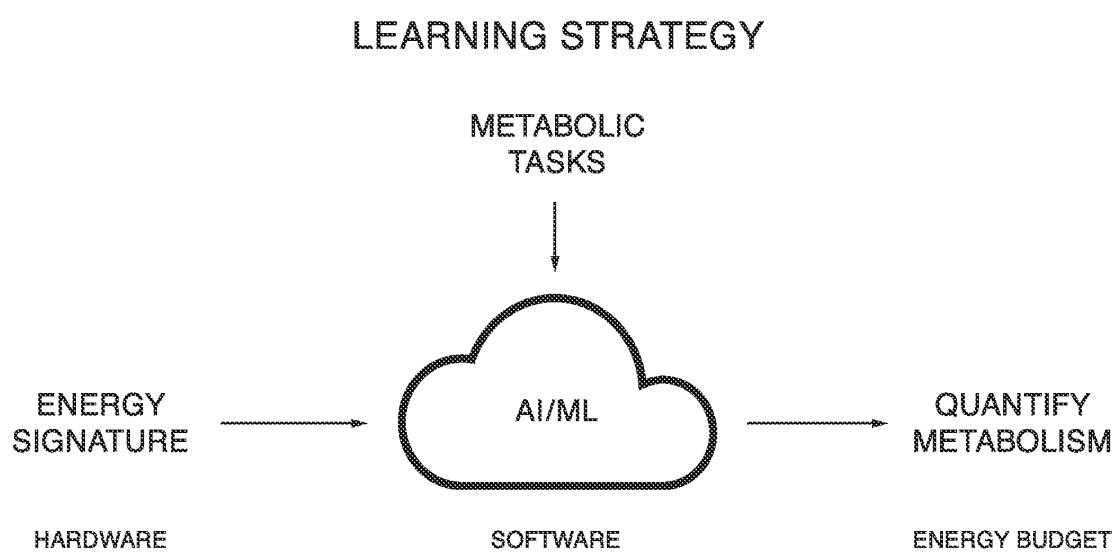


FIG. 2

**FIG. 3**



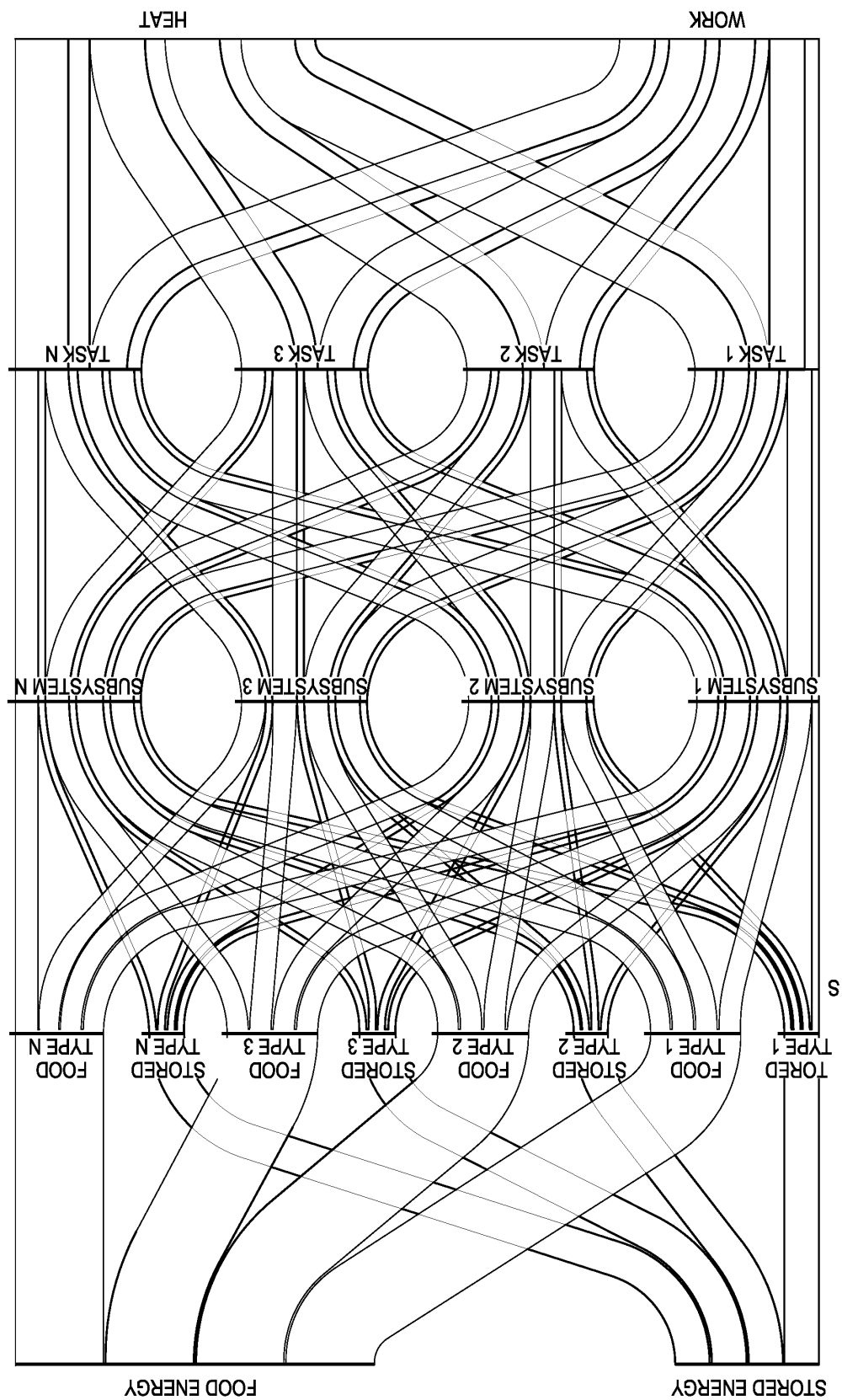


FIG. 5

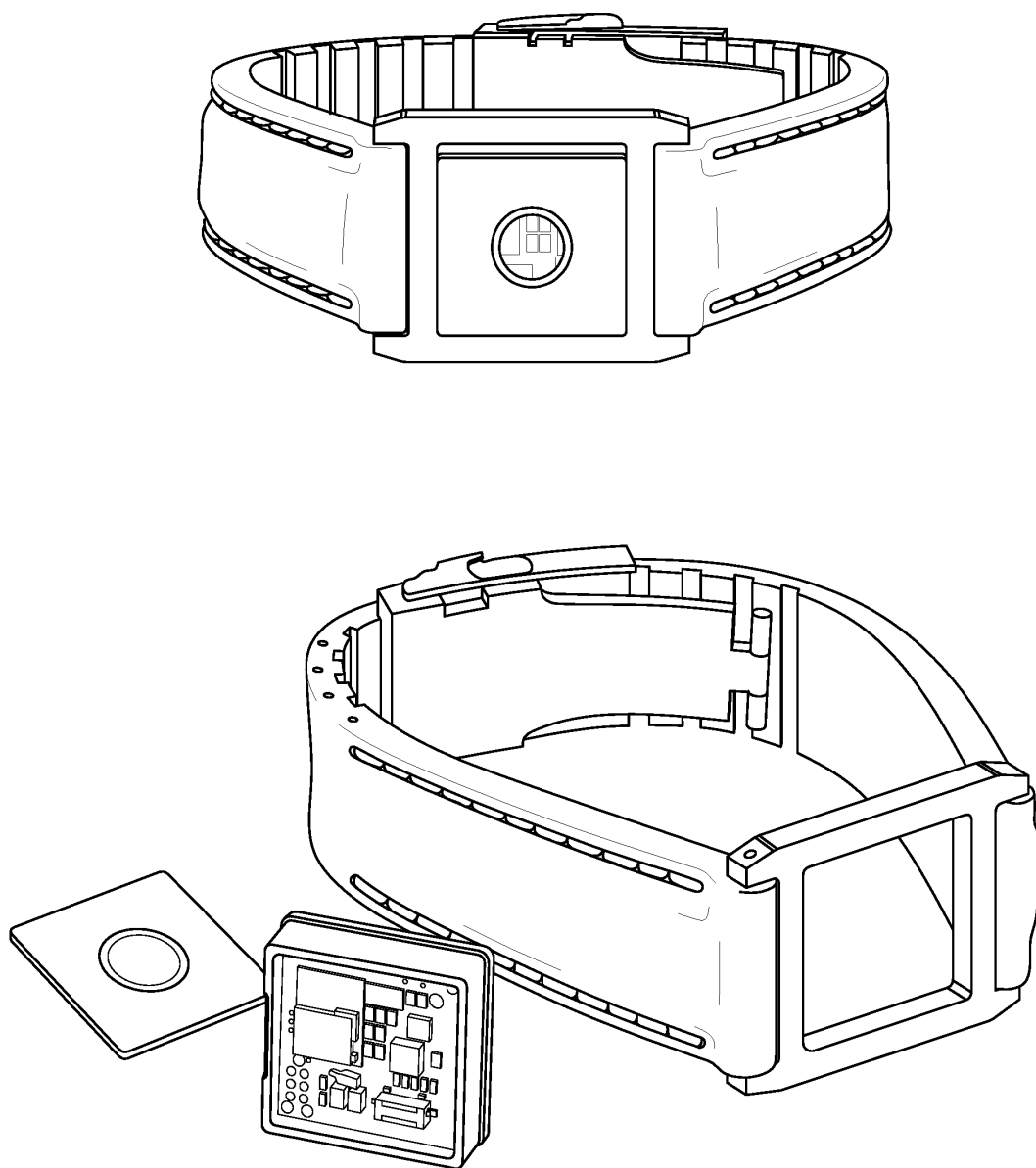


FIG. 6

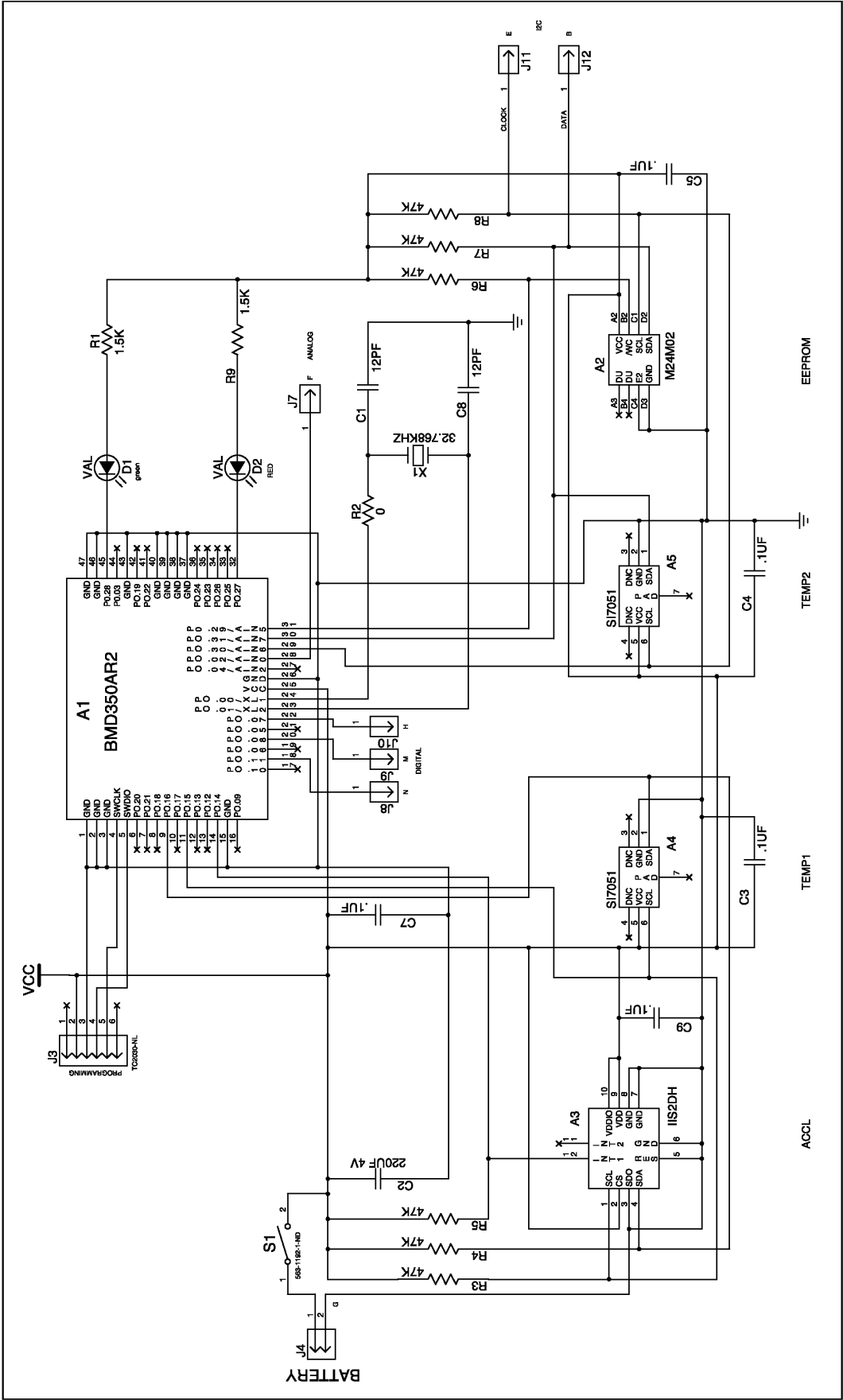


FIG. 7

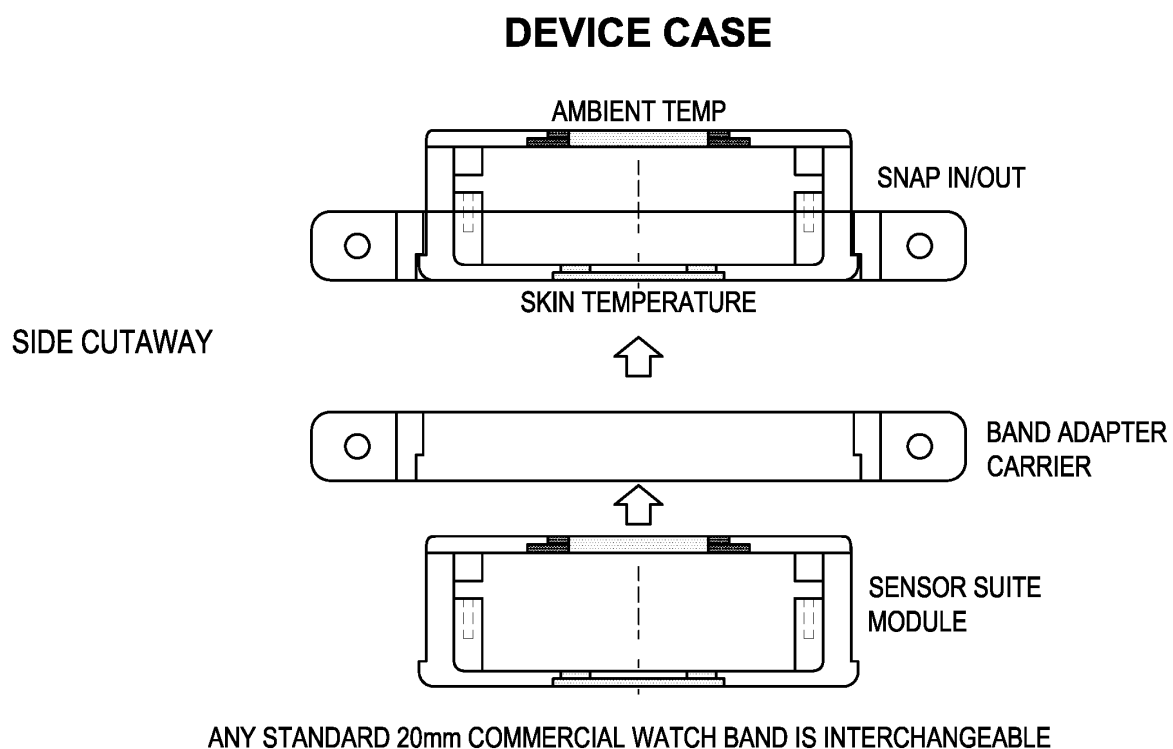


FIG. 8

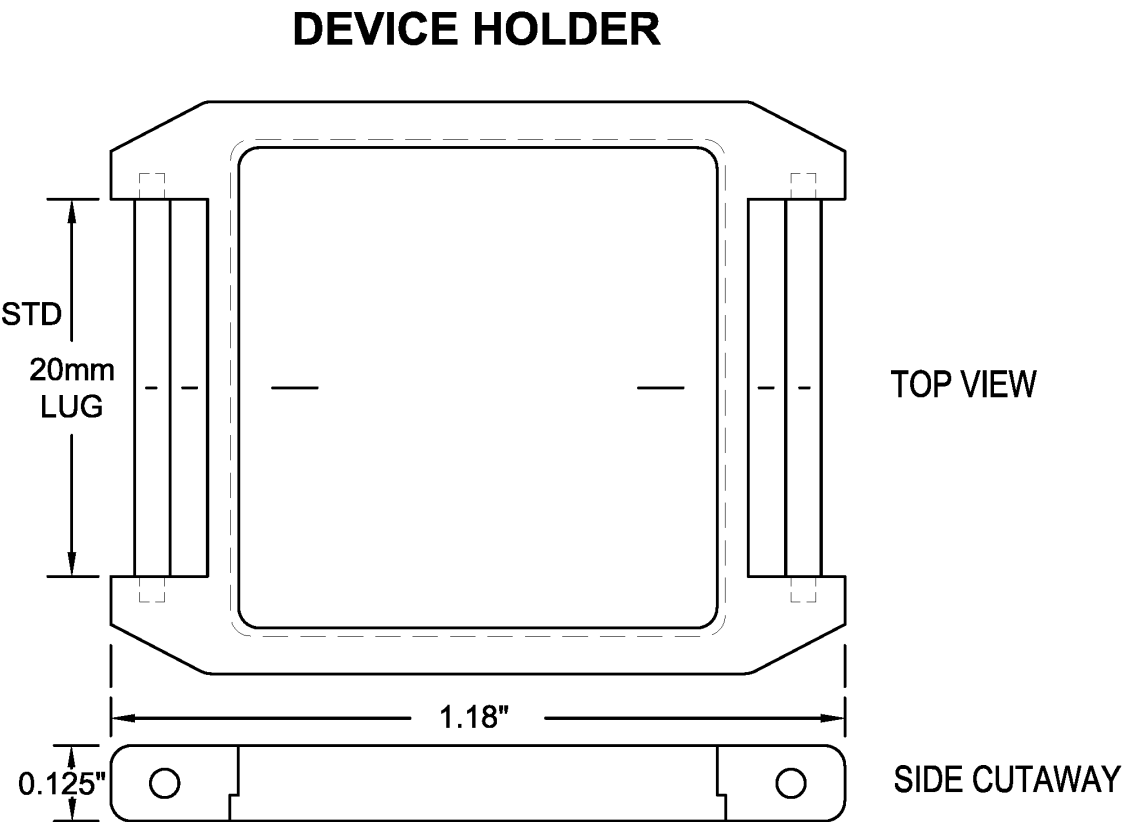


FIG. 9

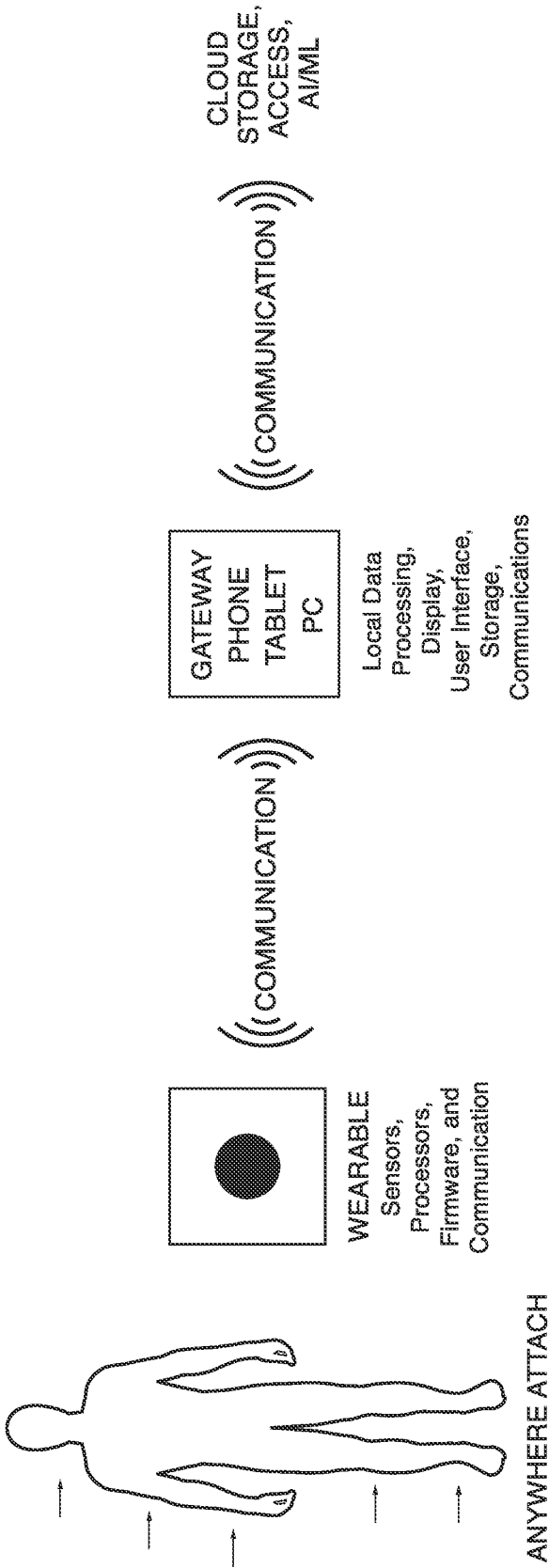


FIG. 10

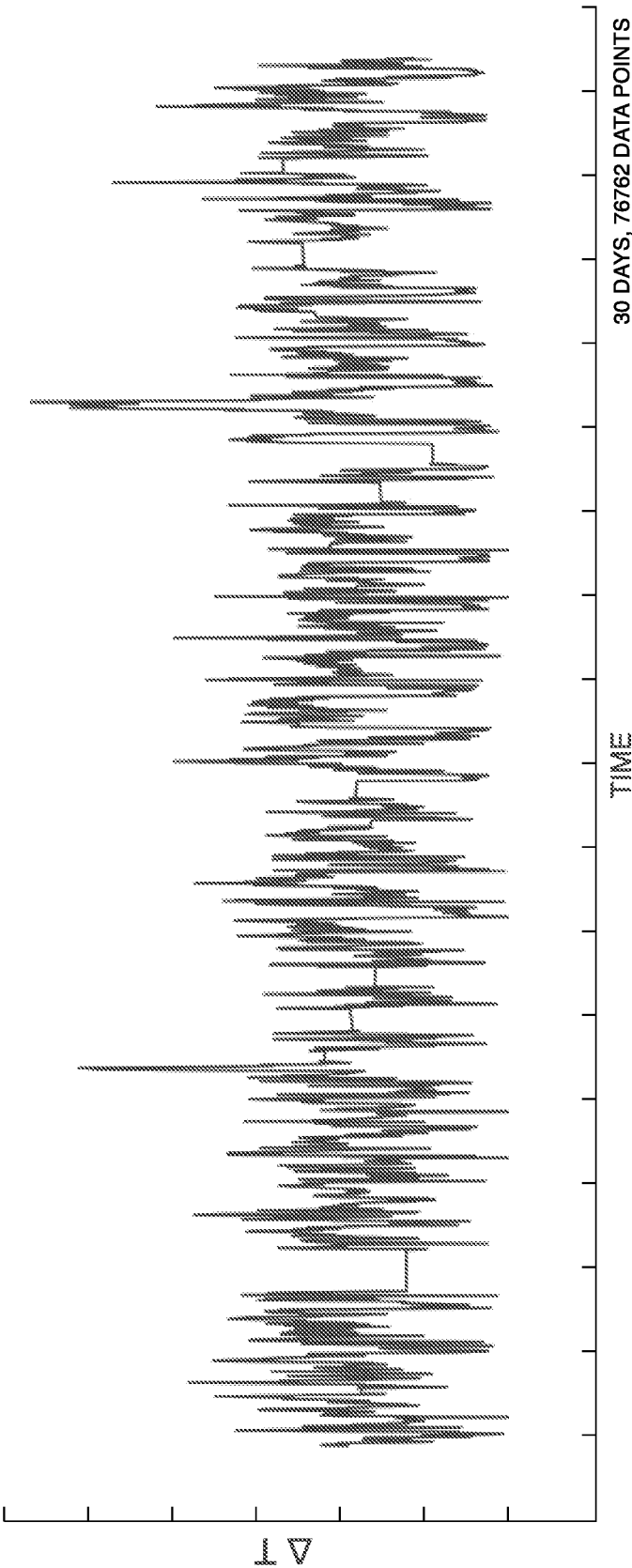


FIG. 11

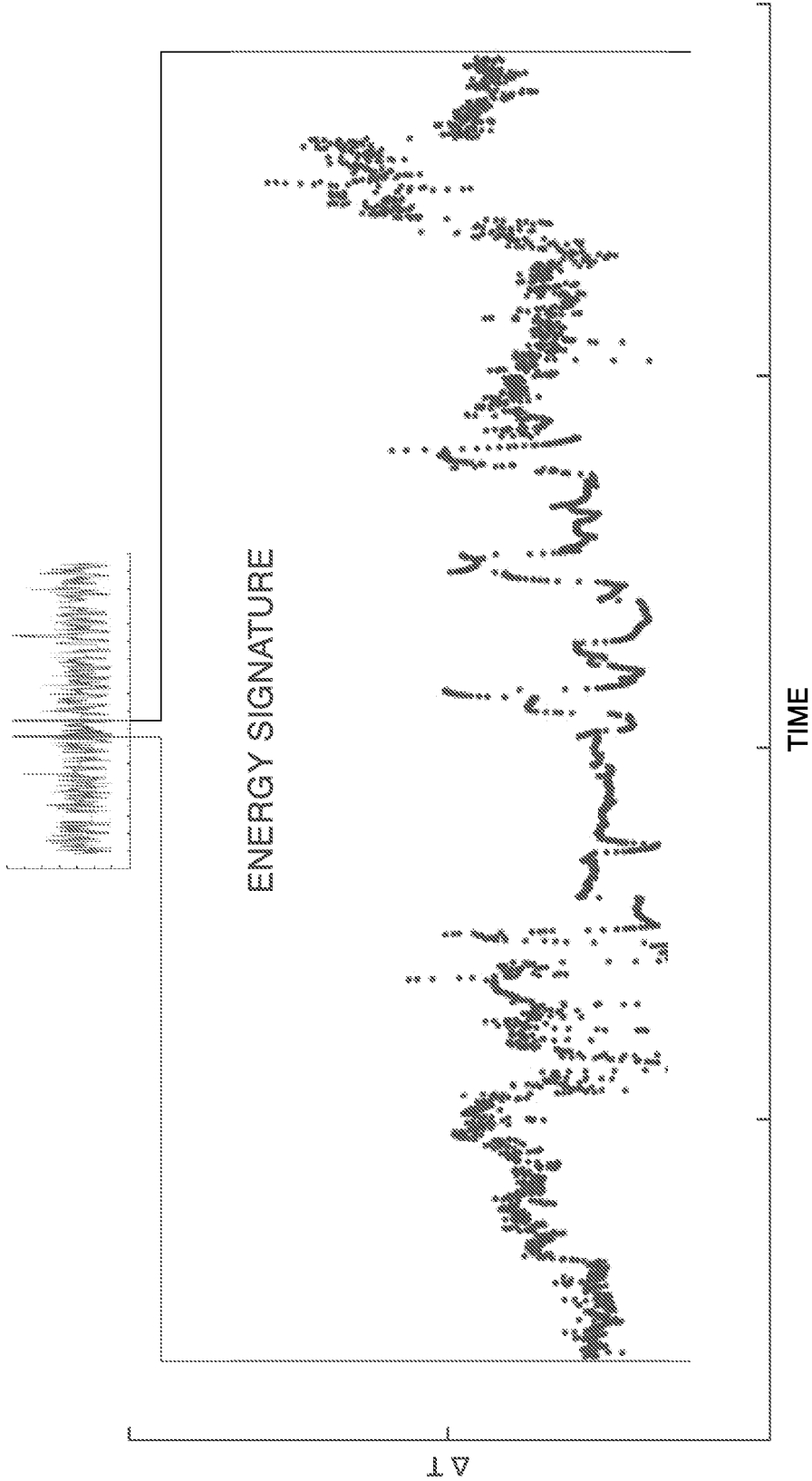
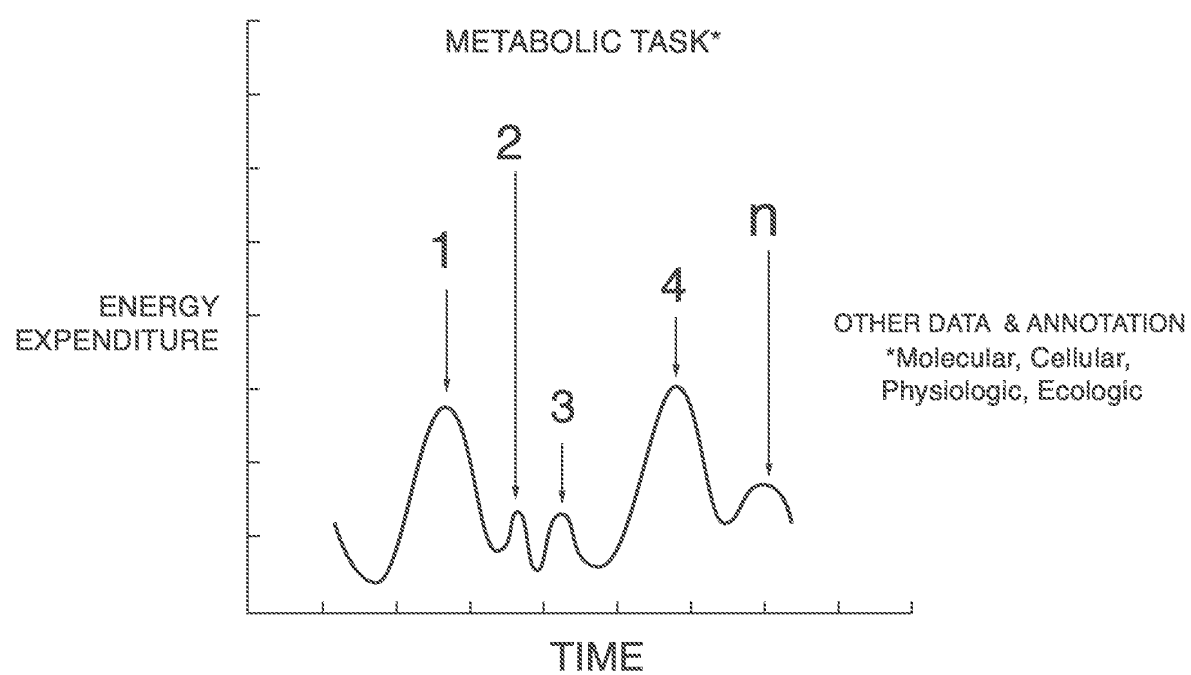
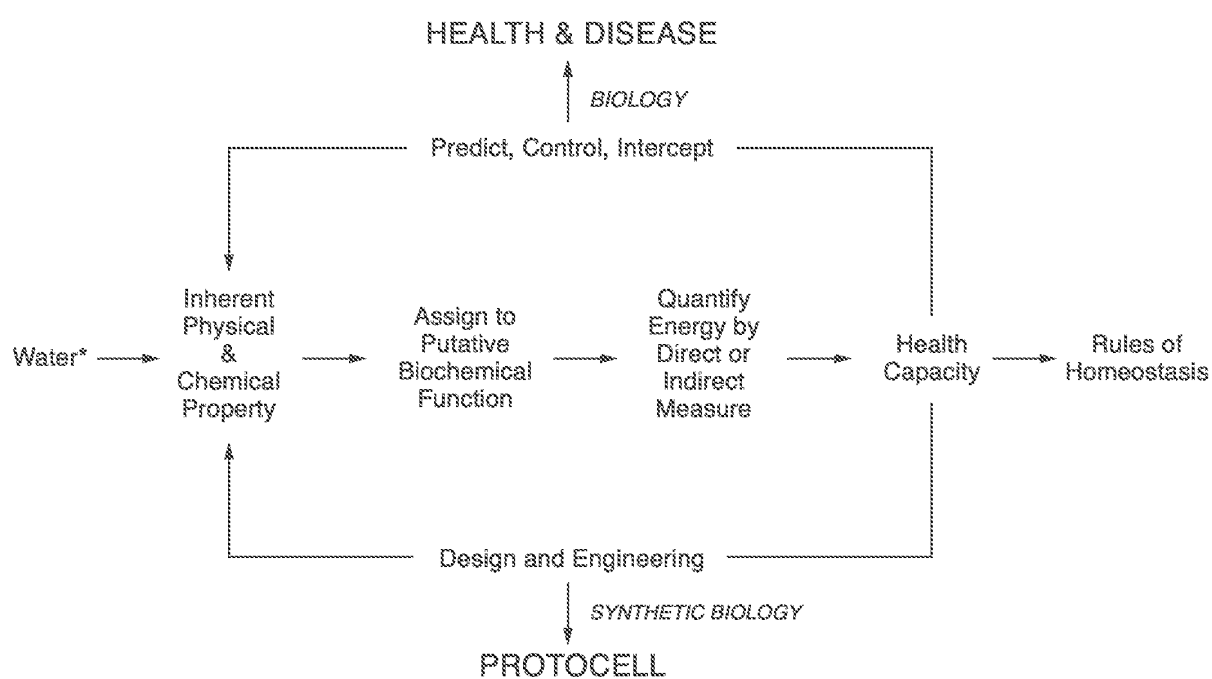


FIG. 12

**FIG. 13**

**FIG. 14**

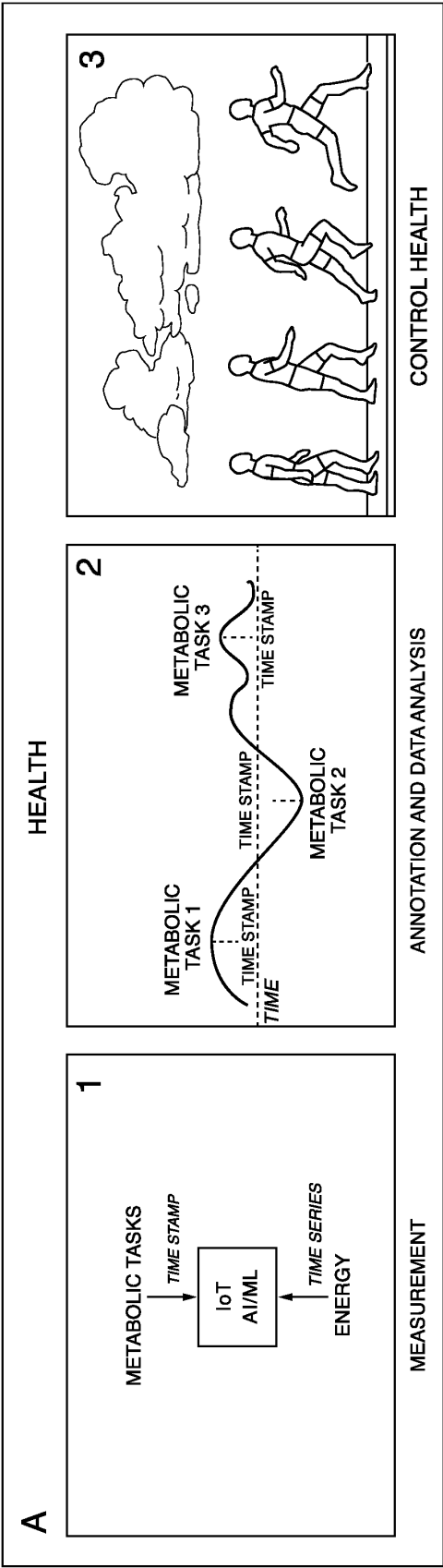


FIG. 15A

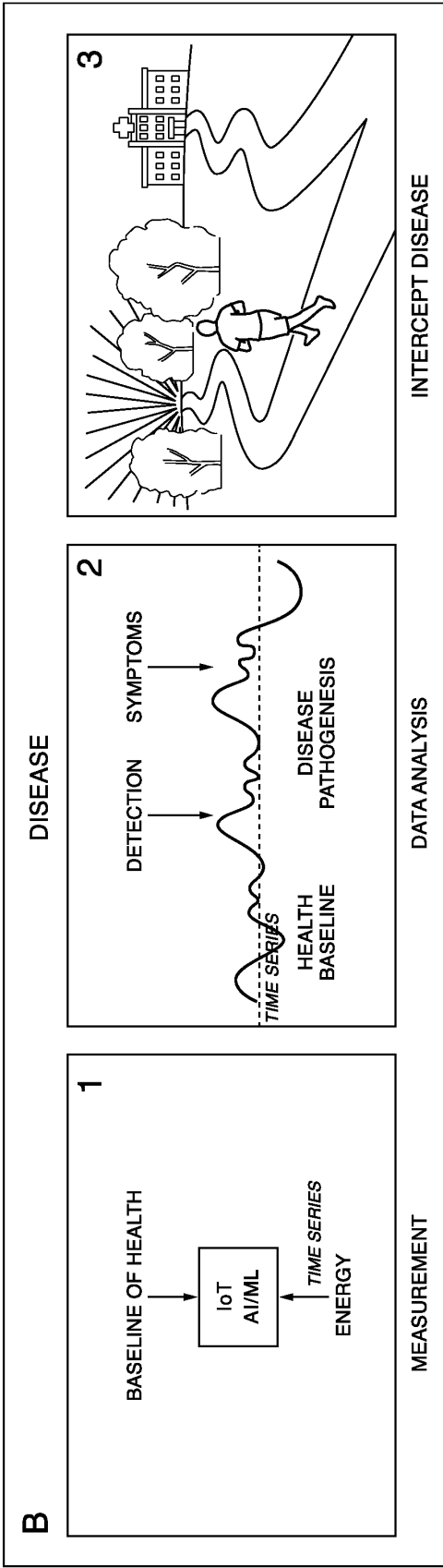


FIG. 15B

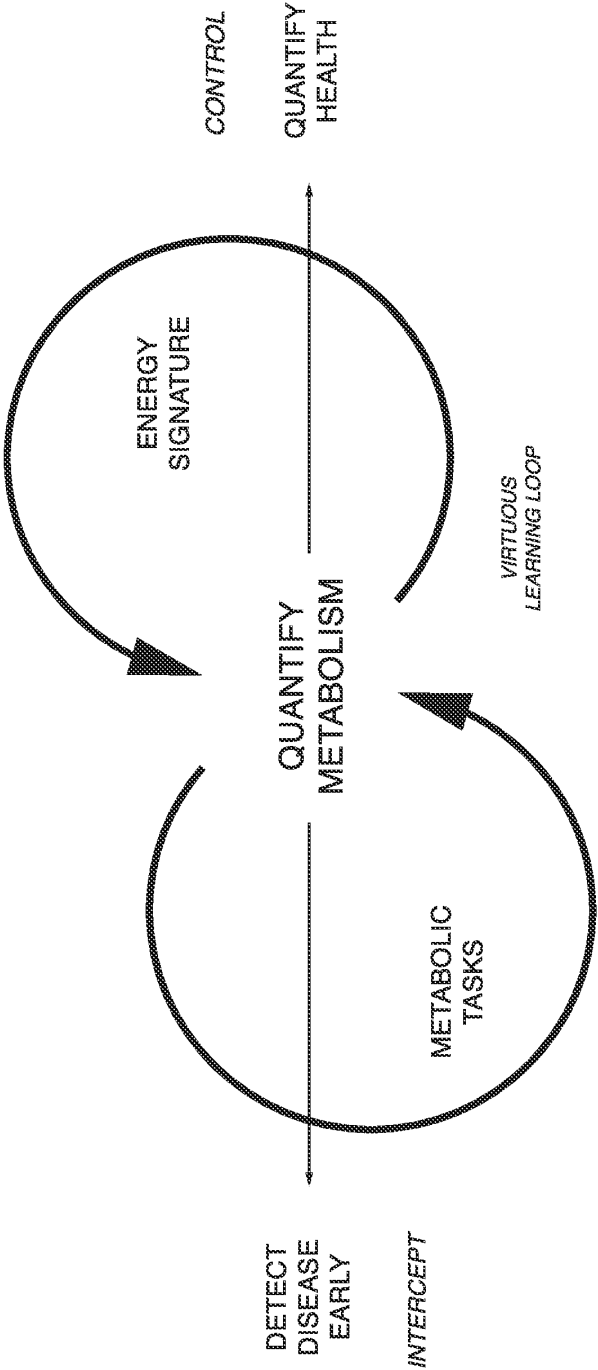


FIG. 16

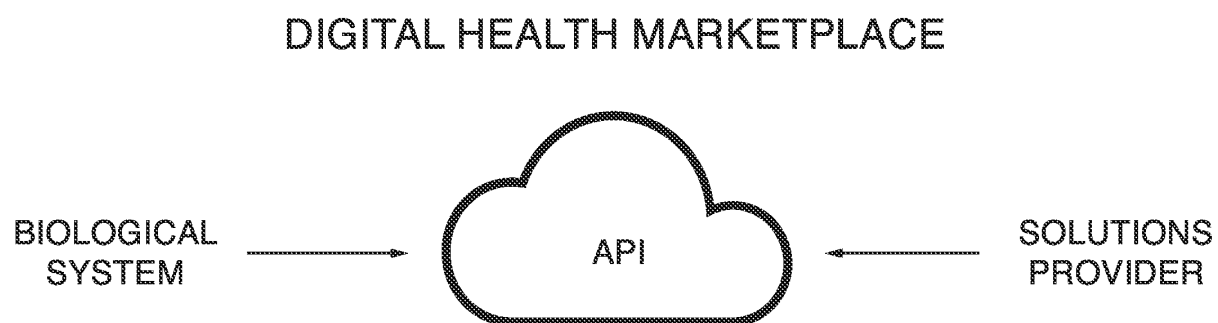


FIG. 17

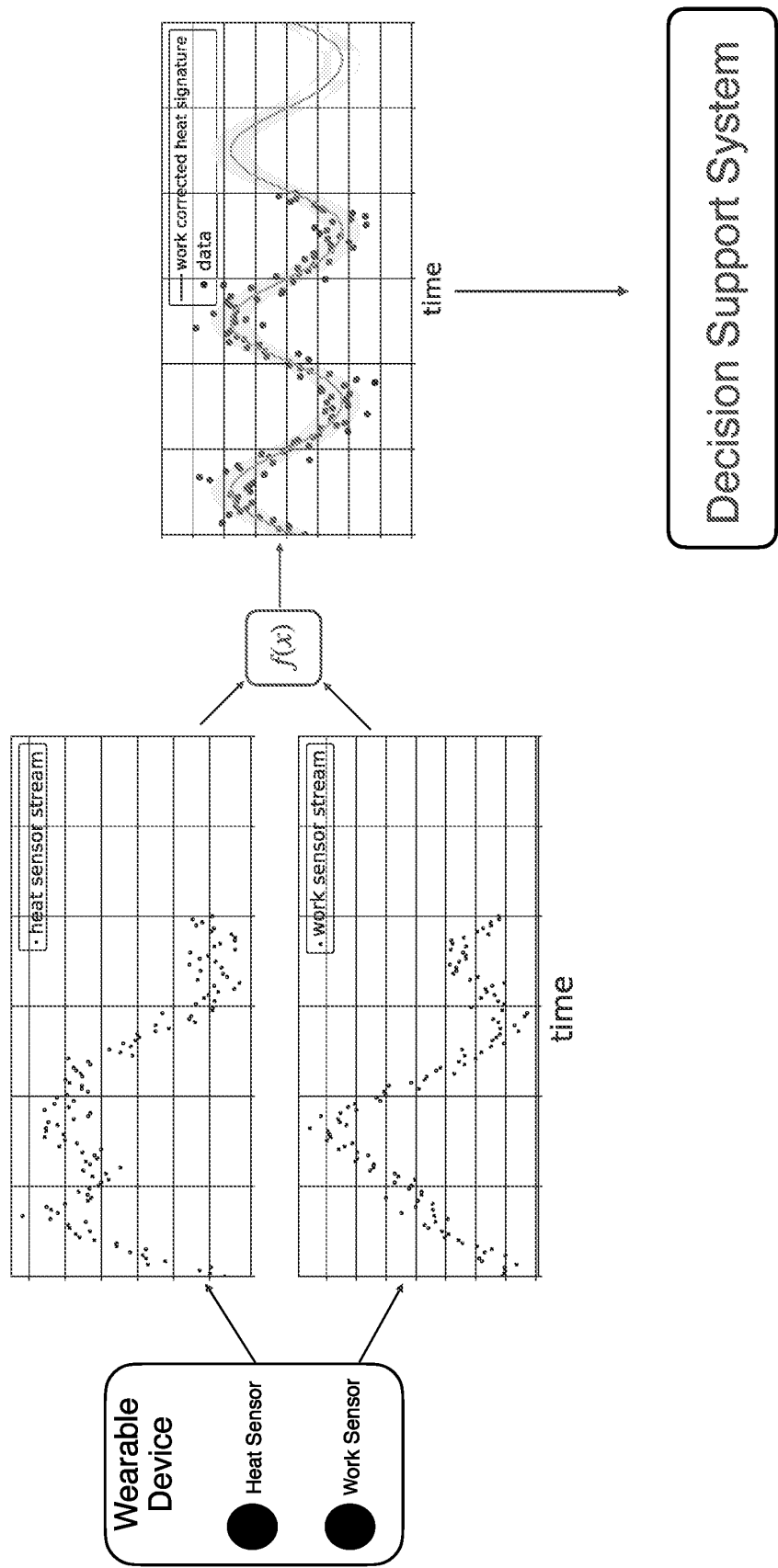


FIG. 18

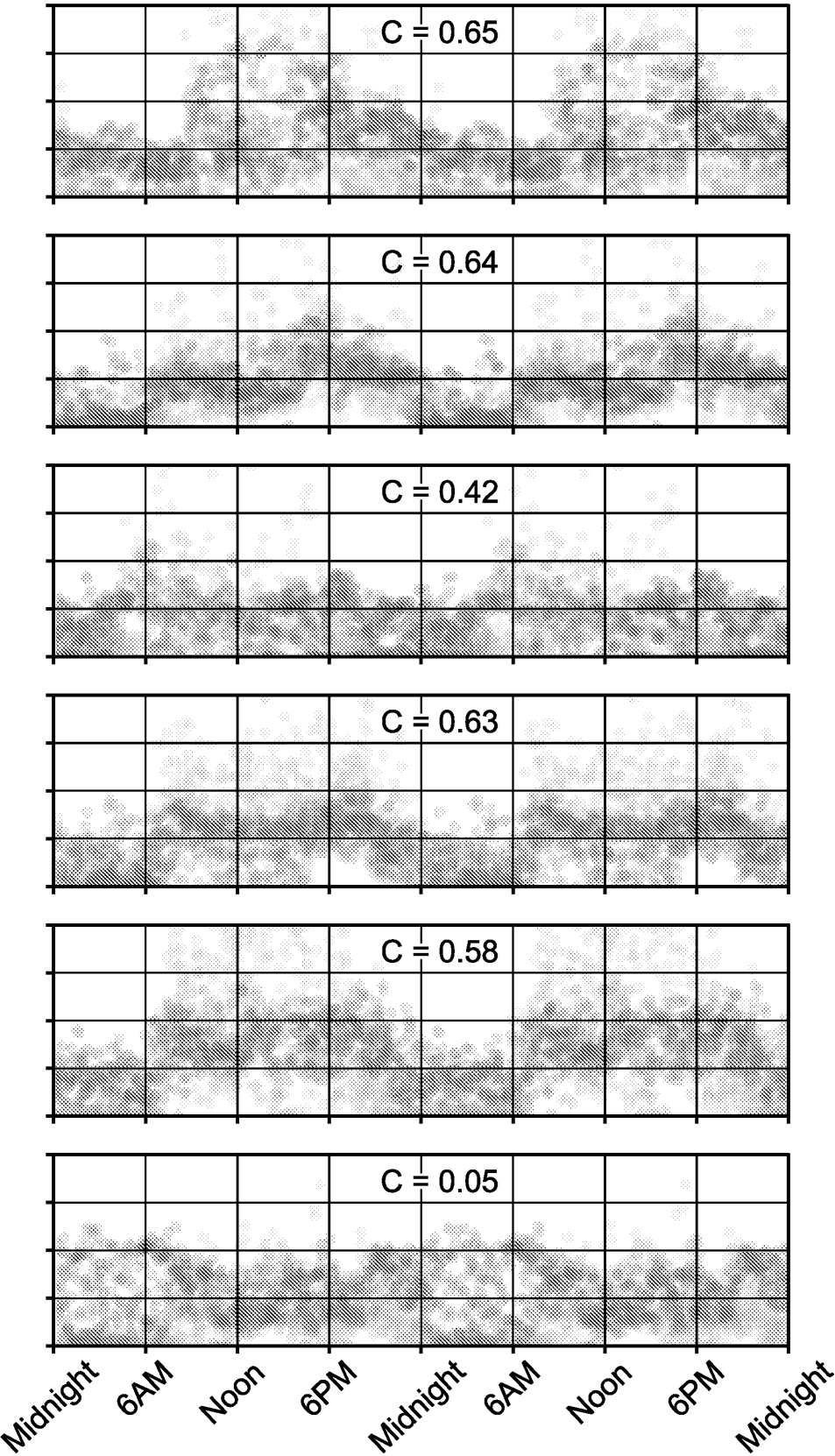
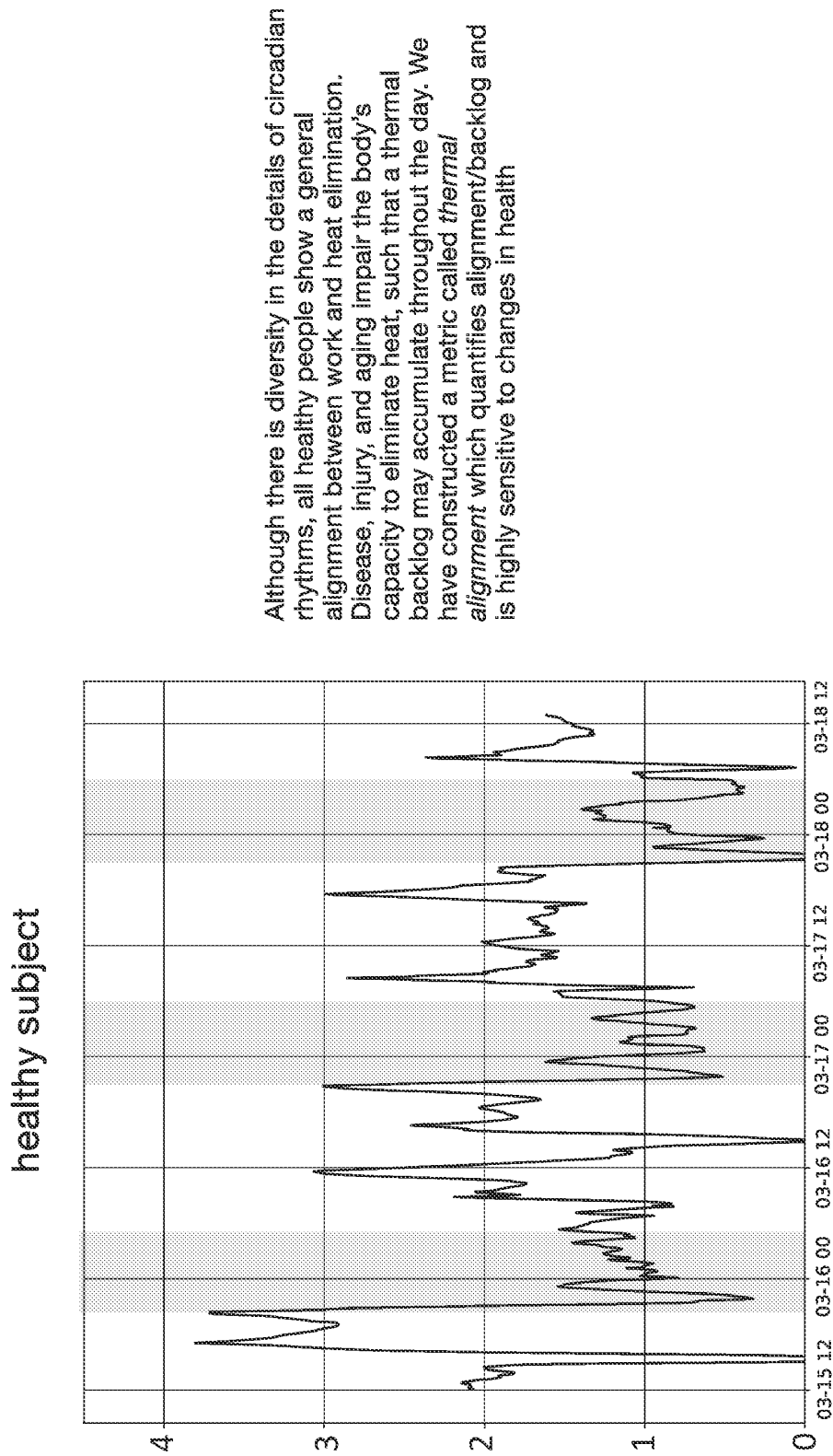


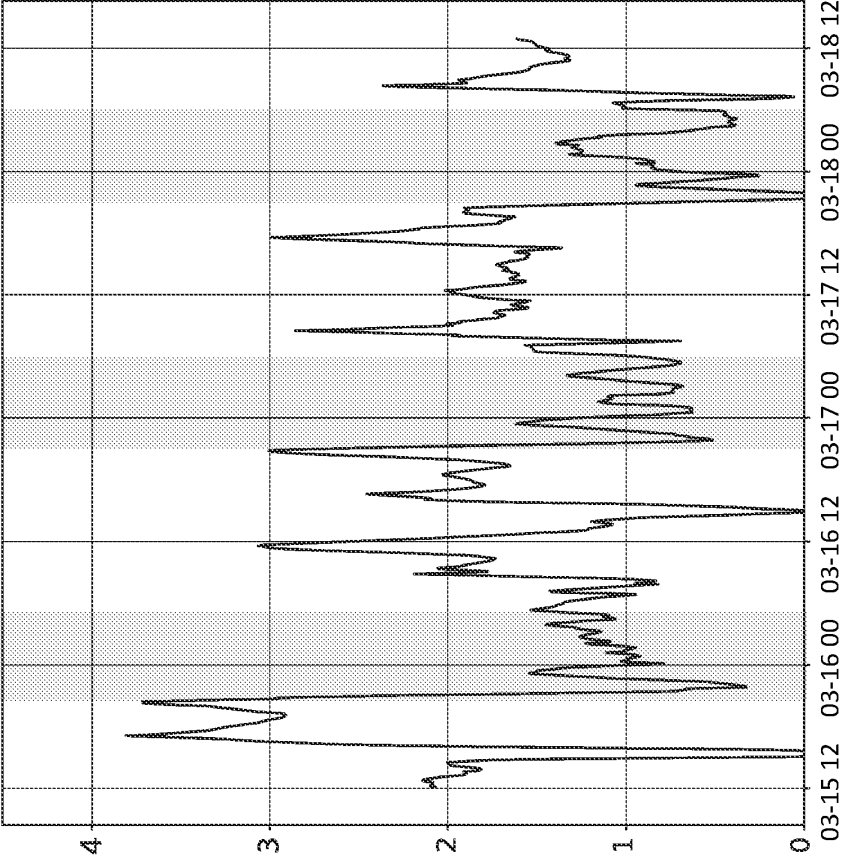
FIG. 19



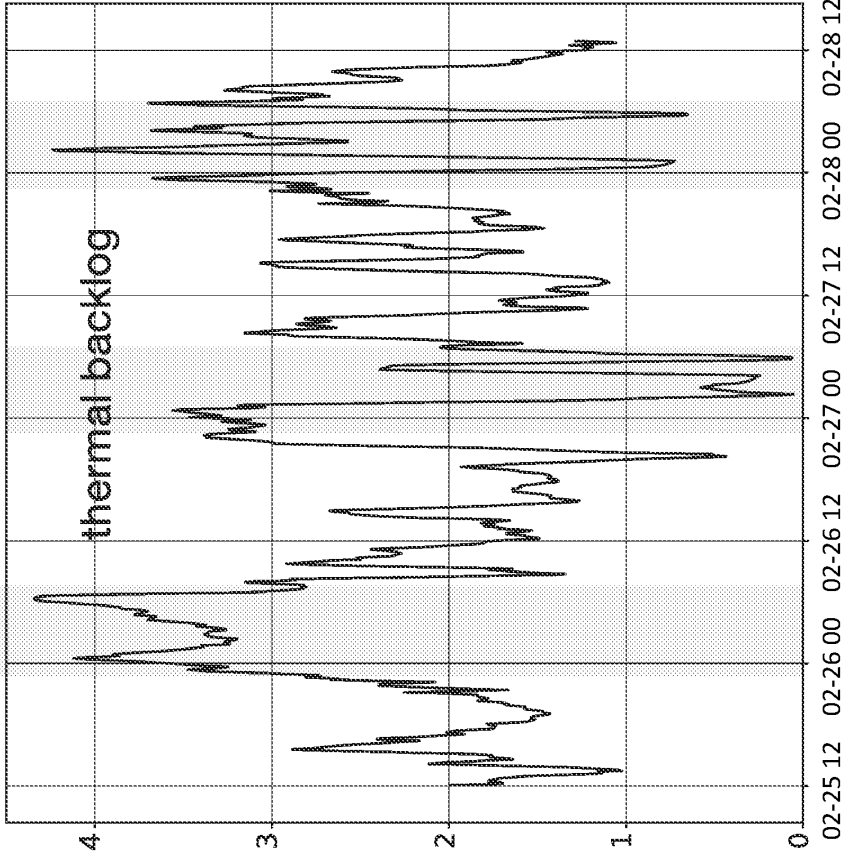
Although there is diversity in the details of circadian rhythms, all healthy people show a general alignment between work and heat elimination. Disease, injury, and aging impair the body's capacity to eliminate heat, such that a thermal backlog may accumulate throughout the day. We have constructed a metric called *thermal alignment* which quantifies alignment/backlog and is highly sensitive to changes in health

FIG. 20

healthy subject



unhealthy subject



thermal backlog

FIG. 21

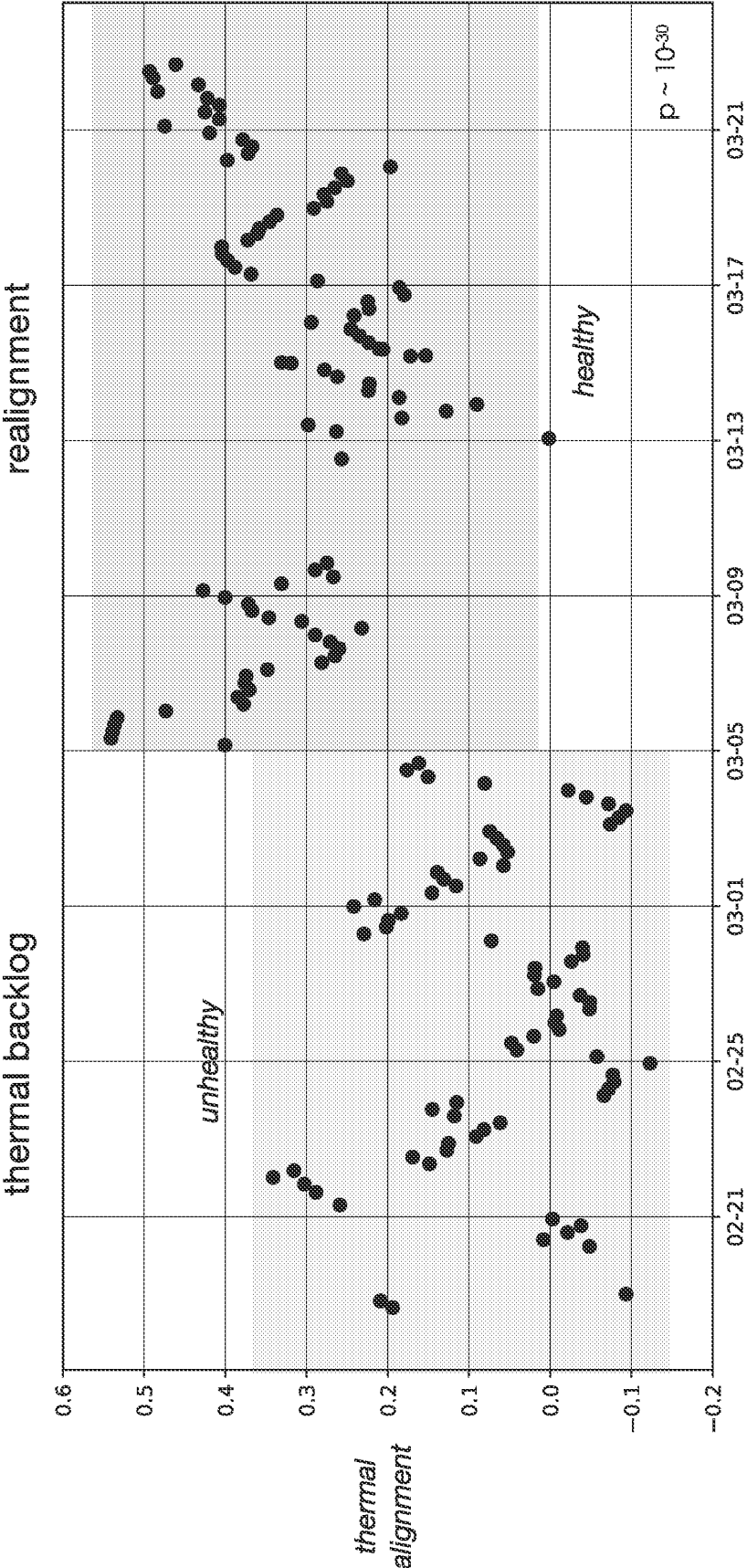


FIG. 22

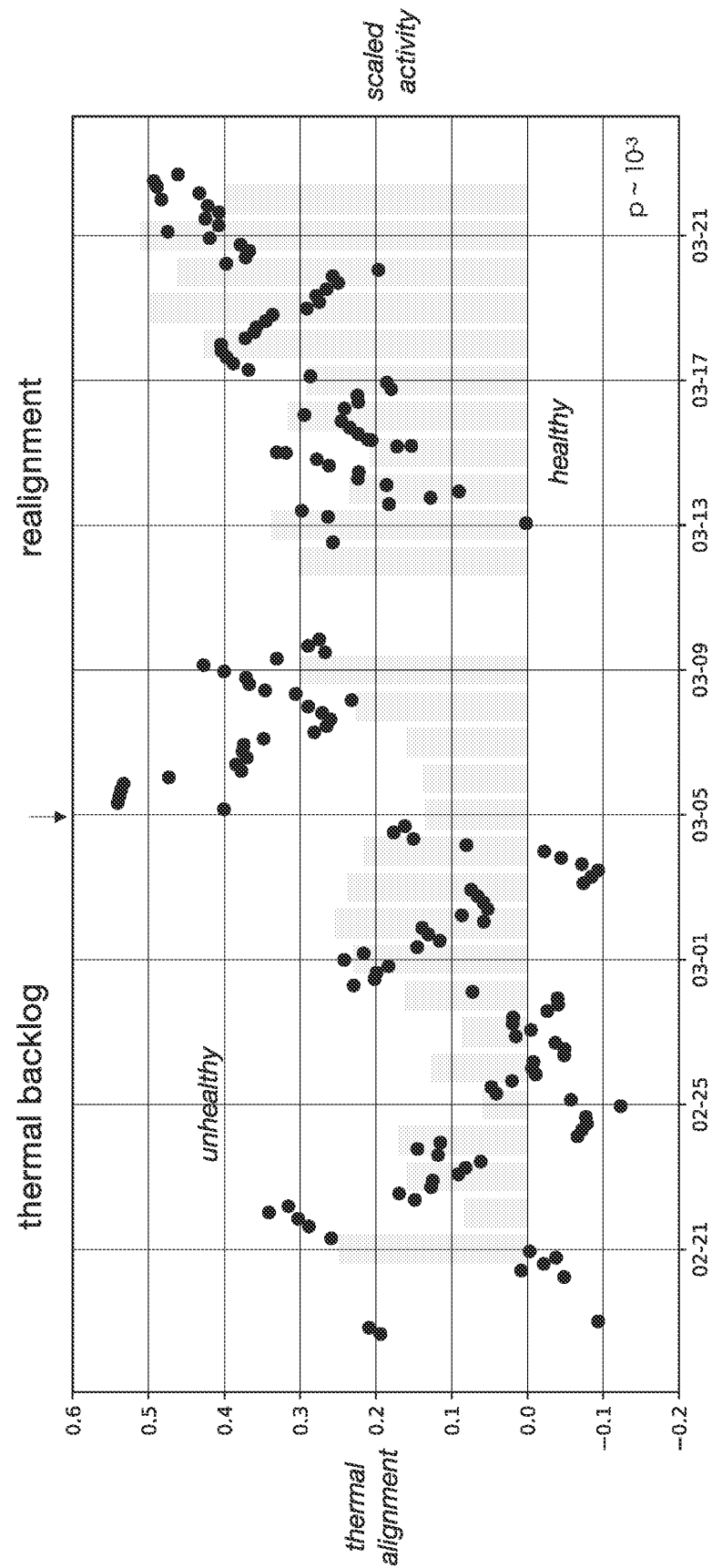


FIG. 23

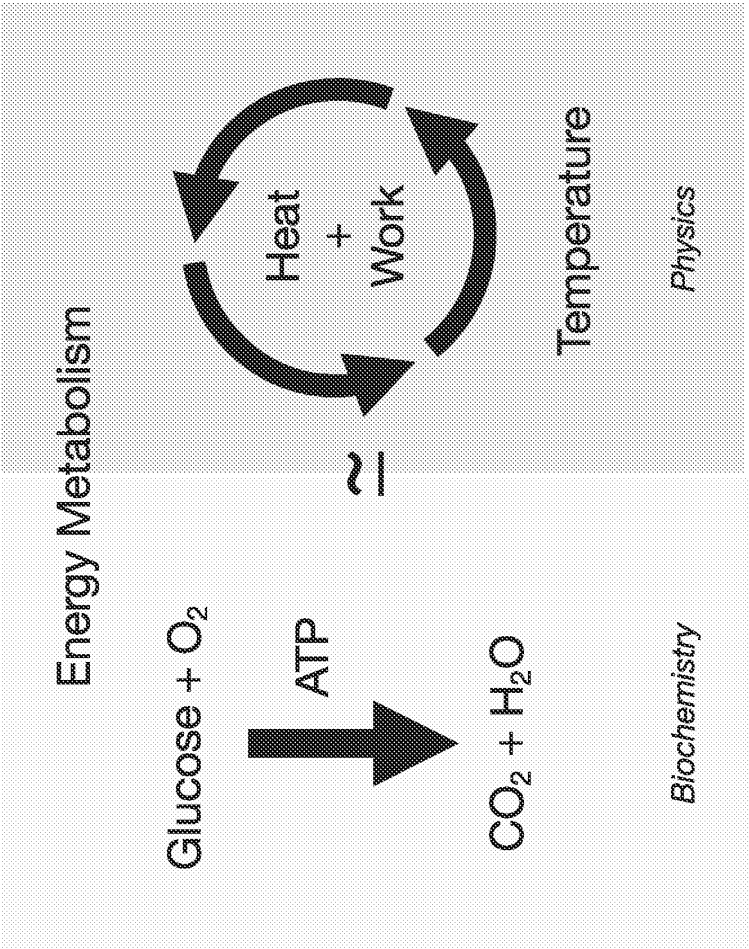
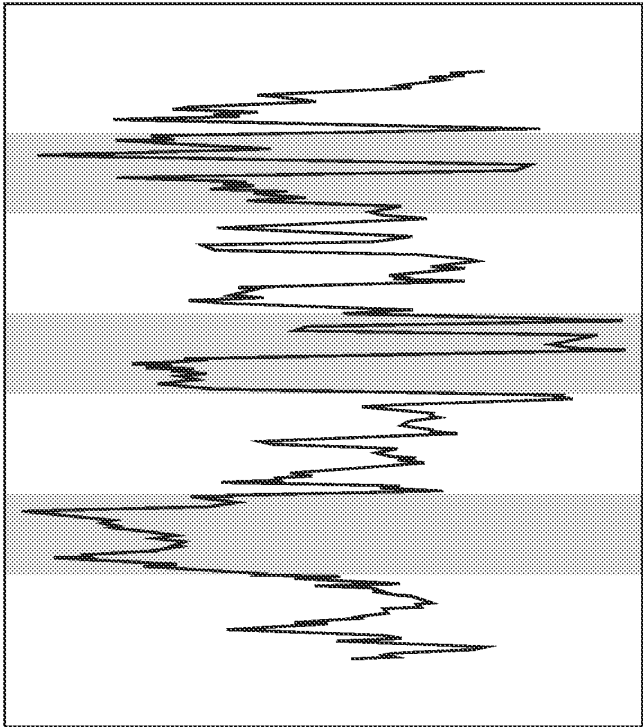


FIG. 24

Abnormal thermal fit. Heat is eliminated during the night (blue) when work is not performed.

Unhealthy Subject



Normal thermal fit. Heat is eliminated during the day (white) when work is performed.

Healthy Subject

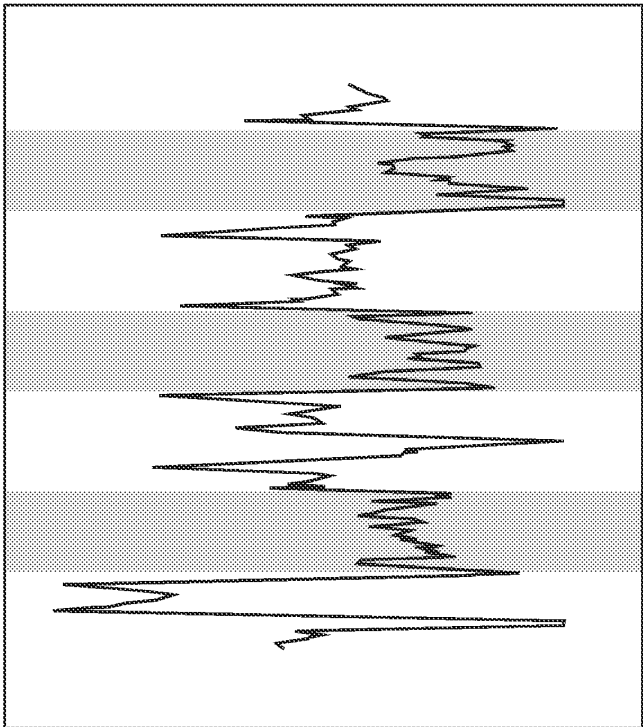


FIG. 25

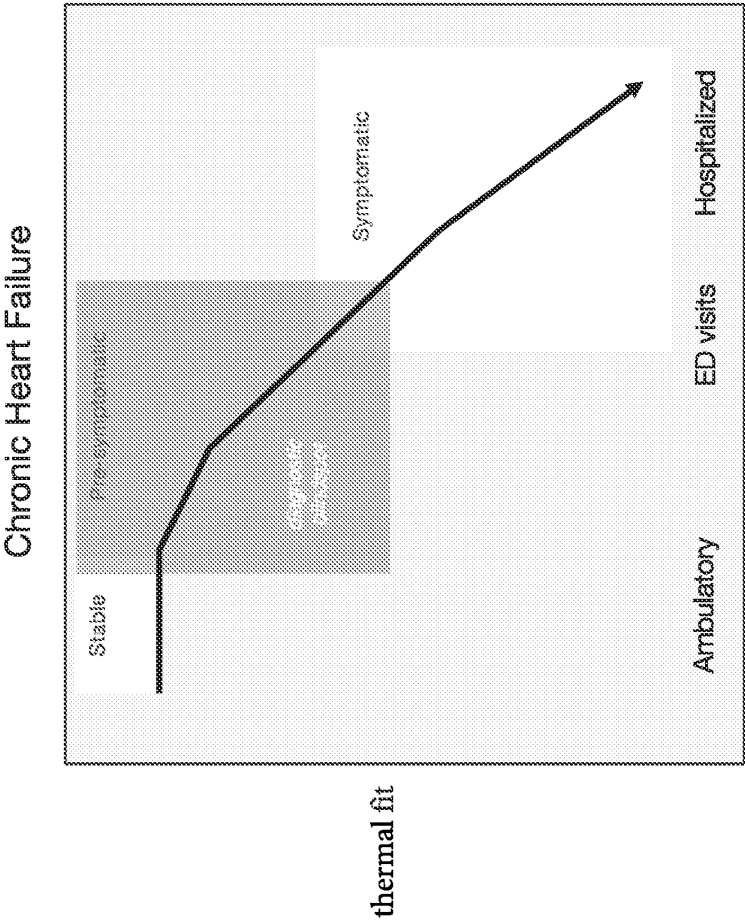


FIG. 26

Chronic **heart failure** affects 6.2M Americans and is a leading cause of US healthcare expenditures, with a ~25% 30-day rehospitalization rate.

The continuous quantification of thermal fit will enable the early detection and timely treatment of worsening heart failure and prevent hospitalization, saving lives and money.

normal 48 hr. heat signature for a
healthy individual

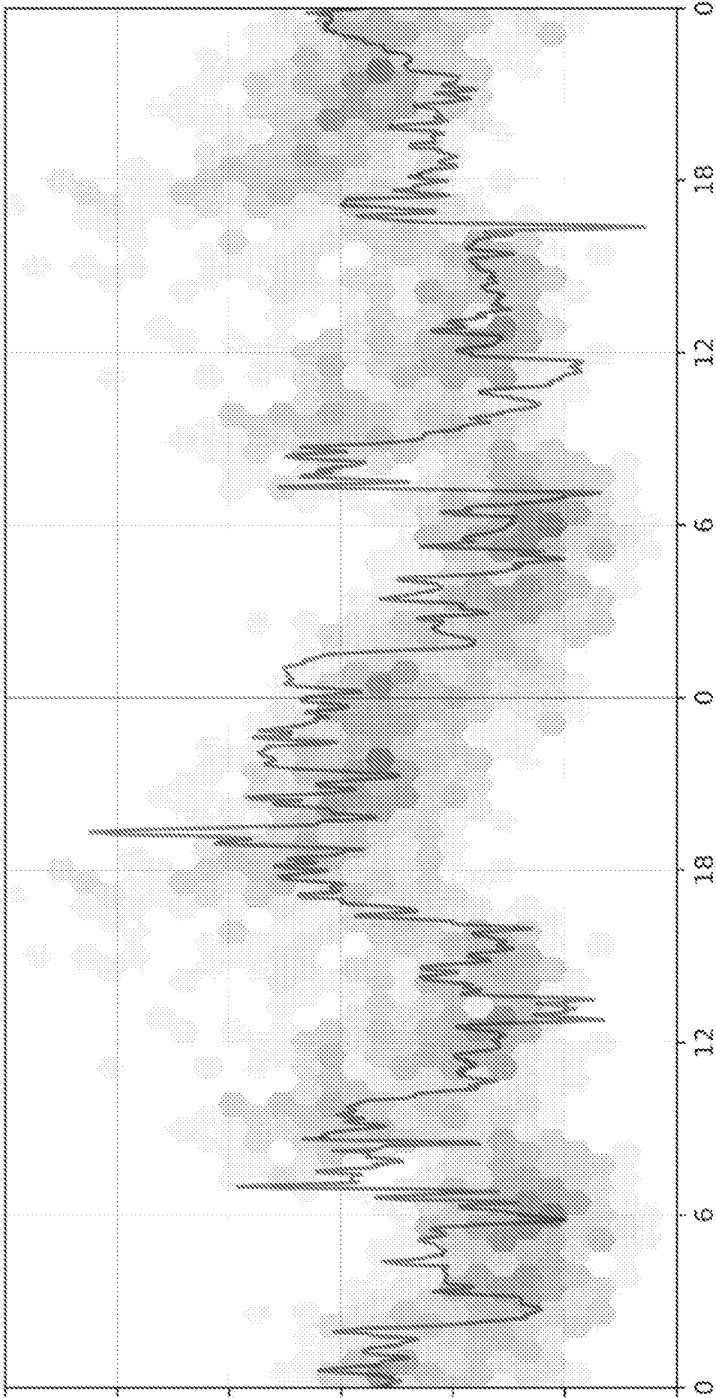


FIG. 27

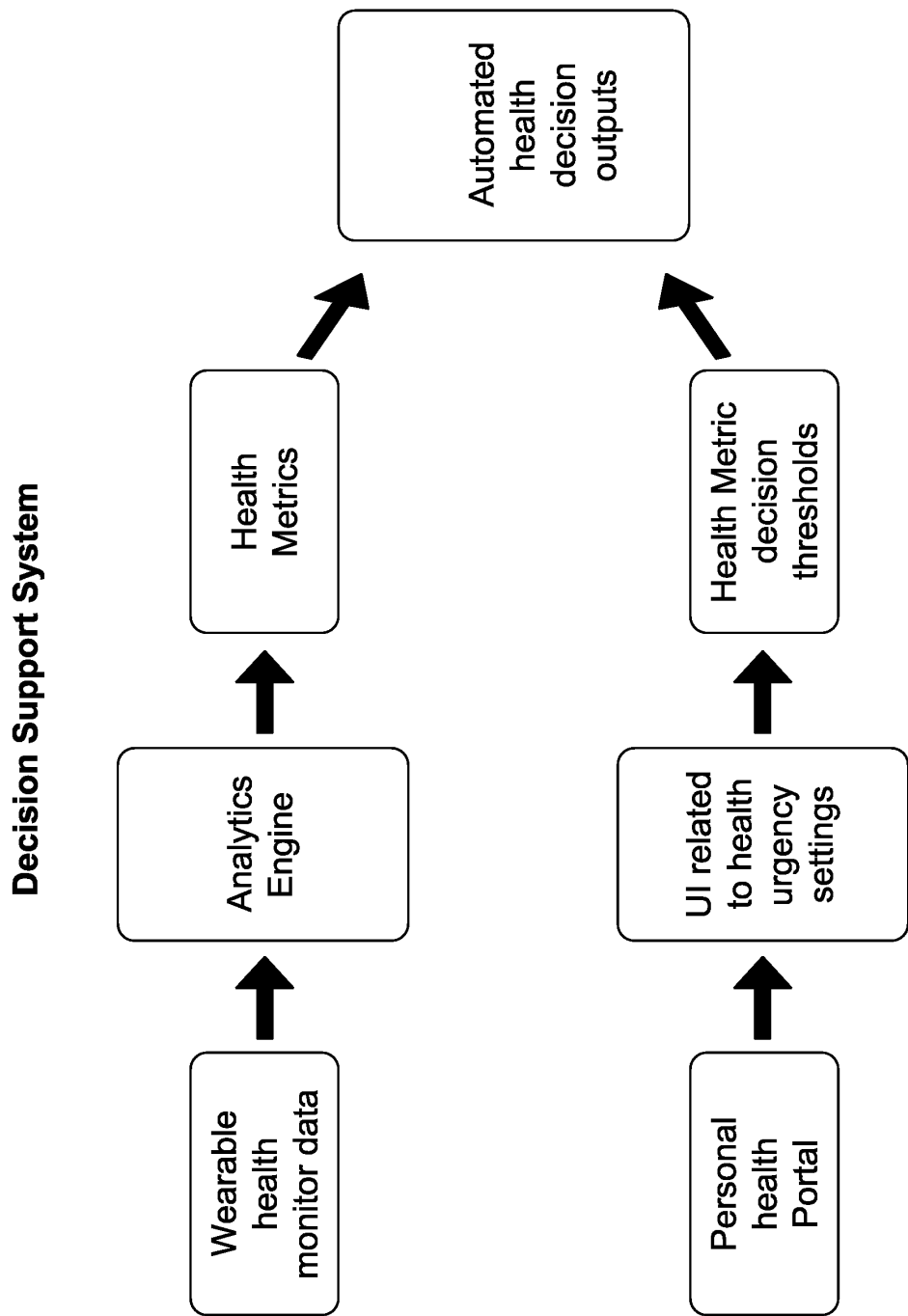


FIG. 28