

Control Subject to Human Behavioral Disturbances: Anticipating Behavioral Influences in the Control of Diabetes (CNS-0931633)

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- This project addresses the design of control systems where the principle disturbances are the result of routine human behavior
 - Random, but not zero-mean white Gaussian
 - Statistical regular, but not periodic
- Goals:
 - To develop new mathematical models (“profiles”) of human behavioral disturbances, focusing especially on appropriate statistical characterizations of routine behavior
 - To formulate and solve new control-theoretic problems that seek to anticipate human behavioral disturbances

Principle Application:

- Artificial Pancreas – feedback control of Type 1 Diabetes, where meals and exercise are the two main disturbances

