



## Life Engineering Symposium

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### **Sensors and Circuits**

*Programming Dynamic Cellular Behavior with Engineered Molecular Sensors* 🗣️

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#### **Abstract:**

Cells employ a variety of different sensor biomolecules to dynamically evaluate their environments and trigger appropriate metabolic responses. The ability to program cells with engineered molecules that can sense structural and chemical events is a critical technology for many of the challenges that face us in biotechnology and medical research. Recent progress in the design of tailor-made molecular switches and sensors is rapidly advancing our ability to engineer 'smart' systems that will perform information processing or signal integration within cells or complex biological samples. In particular, I will discuss our work in the design a new class of nucleic acid-based molecular sensors that transform different types of informational input into biological function and their application in regulating complex cellular behavior.