

Developing Biosensors for Clinical Applications – Lessons Learned and Challenges Ahead

Hakho Lee

Center for Systems Biology, Massachusetts General Hospital / Harvard Medical School

Highly sensitive, fast, and cost-effective diagnostic systems can have far-reaching applications in medicine and the life sciences. In our laboratory, we are dedicated to advancing the field of diagnostics by harnessing the latest breakthroughs in nanomaterials, biophysics, electronics, and computation. Our mission is to create diagnostic platforms that are not only reliable and accurate but also accessible to individuals and communities around the world. In this presentation, we will showcase our latest research endeavors, focusing on integrated biosensors designed for the detection of disease markers in bodily fluids like blood, saliva, and urine. We will also discuss major technical challenges in translating these sensors into clinical applications.