

# 3<sup>rd</sup> International Conference and Exhibition on **Biosensors & Bioelectronics**

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## Bio-electronic platforms for biology cloud experimentation research, education, and entertainment

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Interactive electronic devices and applications have become ubiquitous to our daily lives, such as smart phones, video games, and cloud computation, which then also spawned the field of human-computer interaction (HCI). Here we raise the question whether equivalent bio-electronic devices can be designed that enable humans to interact conveniently with biological processes at microscopic scales, and whether these devices could have the equivalent applications and impact as their electronic counterparts, i.e., human-biology interaction (HBI). We developed a number of platforms for different applications: Biology cloud experimentation labs, that enable scientist to carry out wet lab research online, biotic video games for entertainment and informal science education; and biotic game design kits for undergraduates to learn in an integrated way the foundations of bio-electronics, i.e., optics, electronics, micro-fluidics, real time data analysis, and programming. The talk will also discuss scaling, economics, and sustainability of these platforms.

### Biography

Ingmar H Riedel-Kruse did PhD in Biophysics at the Max Planck Institute and a Postdoc at Caltech, and then joined the Stanford Bioengineering Faculty. His lab studies the self-organization of multi-cellular systems, and engineer platforms that enables researches and lay citizen to interact with these systems towards various applications.

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