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Working in the biomedical engineering domain: opportunities and challenges.

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Despite advances in medicine and public health, bacterial infectious diseases are major causes of death and disability worldwide. The eradication and control of such diseases requires focused research initiatives that can deliver novel and innovative solutions. Although there are endless opportunities for biomedical engineering based on systems biology principles in this area, there are also barriers for productive collaboration between engineers, medical doctors and scientists that need to be addressed. These challenges – which scale beyond the specific field of “controlling bacterial infections” - include ‘cultural’ differences in the different fields, and that collaborations are most often established at the individual level based on mutual interests rather than by systematic analysis. I will present a couple of examples that illustrate the need for biomedical engineering in relation to fighting bacterial infectious diseases, and discuss some of the challenges that prevent us from translating our research into medical solutions.