

## **The imperative science needs for health-related water research and education**

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Linking advances in genomics research, mathematics and earth sciences as well as novel engineering technologies is imperative in order to create a future of globally safe water. To address the major challenges in managing the growing amounts of animal and human waste water pollution; protecting water resources and restoring an economically vital coastline, we will need to invest in the characterization of our water microbiological communities and shift the pollution science paradigm toward an understanding of risk and resilience under global change.