

## **Water sustainability in a changing world**

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Water is a vital renewable resource for society which is increasingly stressed by multiple demands for water supply, agriculture, industry, recreation, and ecosystem needs. Changes in water supply and demands for water are driven by population growth, climate and land use change, and our energy choices (such as biofuels, oil sands, and shale gas). In this talk, we discuss the drivers affecting water sustainability and potential solutions including: adapting to a changing water world, direct and indirect potable water reuse, resilient water infrastructure, and more holistic management of the water cycle. This paper also describes research at Clear Creek watershed (270 km<sup>2</sup>), a tributary of the Iowa River in eastern Iowa, to create an environmental observing facility and intelligent digital watershed (IDW) for better water management and prediction.