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Cellular hydraulics: physics and physiology

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Hydraulics (from the Greek word $\delta\rho\alpha\upsilon\lambda\iota\kappa\varsigma$) is the study of fluid movements and fluid power. In this brief talk, I will discuss the implications of water movements through soft porous structures for the dynamics of nuclear swelling and the cytoskeleton in animal cells. If time permits, I will conclude with a quantitative description of the growth of pollen tubes treated as hydraulic machines.