DEPARTMENT OF **CHEMICAL & ENVIRONMENTAL ENGINEERING**

DOUGLAS S. CLARK

THE WARREN AND KATHERINE SCHLINGER DISTINGUISHED PROFESSOR AND CHAIR
DEPT OF CHEMICAL & BIOMOLECULAR ENGINEERING
UC BERKELEY

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9:30 - 10:30 AM
BOURNS A265

BREAKING A BIOFUELS BOTTLENECK: DECONSTRUCTING BIOMASS FROM THE GROUND UP

Cellulases are of longstanding interest for converting the cellulosic content of biomass to simple sugars for biofuels production. To facilitate this conversion, physical and/or chemical pretreatment is necessary to improve the accessibility of biomass polysaccharides to enzymatic hydrolysis; however, no single pretreatment method meets all the criteria of a cost-effective process. Cellulase mixtures that are compatible with a range of pretreatment options and function optimally under favorable processing conditions would thus be advantageous and potentially transformative for industrial application. We are exploring new pretreatment strategies in concert with bioprospecting, enzyme engineering, and mechanistic modeling to elucidate the complex function of cellulase mixtures and develop more efficient routes to break down biomass into fermentable sugars.