

## *Feed and Fueling Nine Billion People in the 21<sup>st</sup> Century*

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Coal and corn, petroleum and poultry, gasoline and garbanzo beans – the foods and fuels that the world consumes are products that are ultimately derived from photosynthesis, the process by which sunlight energy is converted to chemical energy.

Over the last 100 years we have exploited fossil fuels to drive unprecedented economic and agricultural growth, but in so doing we have released sequestered CO<sub>2</sub> into the atmosphere, which is now beginning to impact our climate, and our lives. Eukaryotic algae offer tremendous potential for the large-scale production of biofuels and bio-products as algae require only sunlight as an energy source and sequester CO<sub>2</sub> during the production of biomass. Our challenge is to domesticate algae to allow these highly productive species to become efficient energy, food and bio-product production platforms. Dr. Mayfield will discuss the challenges, potential and some early successes of algae as a source of biofuels and bio-products.