Defining and manipulating metabolic pathways to improve seed composition

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Seeds from different crops represent an important source of oil, protein and carbohydrate for food and feed. I will describe different projects from my lab aimed at understanding and manipulating metabolic pathways important to produce oil and protein. This work includes using synthetic biology to achieve the complete remodeling of seed oil production to produce novel molecules useful for different applications, as well as a project that explores the flux of polyunsaturated fatty acids in oil production. I will also discuss efforts to enhance oil production and improve amino acid composition in soybean seeds.