Motivation

- Economic, environmental, and political concerns regarding national petroleum usage has driven an increased interest in biobased fuels and other bioproducts.
- In order to maintain the cost-competitiveness of canola biodiesel industry, new higher-value uses for the oilseed meal will need to be developed.
- Soybean meal industry provides an excellent model of higher-value uses of an oilseed meal.

Objectives

- Development of bioproducts particularly suited to canola protein functionality
- Advanced protein separation and modification via chemical and enzymatic treatments for more specific functionality
- Use of various plasticizers to obtain better mechanical properties of canola based plastics and biocomposites
- Use of synthetic polymers (and compatibilizers) at various proportions with canola proteins to achieve better strength and water resistance properties
- Use of various cross-linkers to impart strength and toughness into plastic specimens
- Compounding extrusion to polymerize proteins and synthetic polymers and injection molding to prepare tensile and flexural strength test specimens
- Use of Instron testing machine to test tensile and flexural strength of plastic specimens and use of DSC to evaluate thermal properties of plastic specimens.