23 – Supply Chain Life Cycle Assessment

1. Name of faculty/research scientist mentor and contact information, including Department.

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2. In what region will the student be working (county/region/state)?

Eastern Plains, Colorado
San Luis Valley, Colorado

3. In less than 150 words, please describe the proposed internship goals, scope, and objectives.

Life-cycle assessment (LCA) is a technique used to assess the environmental impact associated with all stages of a product's life. The system boundary can range from an isolated unit process to the entire supply chain from production to end consumer (sometimes referred to as 'cradle-to-grave' or ideally 'cradle-to-cradle'). LCA can be used to identify critical impact areas across the value chain. The foundation of a LCA is the process modeling which is intended to accurately capture the energy and mass of the system. Though databases exists for various agricultural cropping systems, they are typically an aggregated average of national data and is useful in quantifying general mainstream commodity products. There is reason to believe that some products and supply chains have different environmental impacts due to regionally specific differences. Accordingly, the selected student will 'ground truth' life cycle assessment data for two supply chains: wheat, and potatoes. Ultimately, this information will be used to help Denver understand the environmental impacts associated with key food policies.

4. What student learning outcomes do you anticipate and are there opportunities for professional development (e.g., attending conferences or stakeholder convenings)?

Through the internship the student will better understand supply chain dynamics, including energy needs and utilization, and how they compare between commodity and differentiated (e.g., organic, specialty/niche) systems. Further, the student will have the opportunity to work with the mentor team, and a larger inter-disciplinary team of faculty to see results integrated into a large, complex, systems model.

5. Does this project already include collaboration with a specific Extension agent/office? If yes, please describe the ongoing collaboration.

This project is a small component of a large, inter-disciplinary research project that involves San Luis Valley area Extension, the Tri River Area Extension, the San Luis Valley Agricultural Experiment Station, the Fruita Agricultural Experiment Station, and others. Accordingly, the student intern will get wide exposure to agents and others in the field.

6. How does this internship support identified stakeholder needs?

In 2017, Denver passed its Food Vision and Plan, including key environmental 'winnable goals'.

7. Are travel funds available? Opportunities to provide student assistance with housing?

Yes, travel funds are available. Housing is likely available at the Agricultural Experiment Stations.