W_TEMP2009: Integrated Systems Research and Development in Automation and Sensors for Sustainability of Specialty Crops

Table–1 Logic model

Inputs	Outputs	Outcomes - Impact		
	(Activities)	Short	Medium	Long
Systems-based approach by a multi-disciplinary and multi-institutional team Stakeholder partnerships and outreach Commercial equipment and technology manufacturer partnerships Student internships and graduate assistantships	Adaptation of biological concepts into parameters that can be sensed Production structures that fit engineering technologies Development of automated and semi-automated equipment Development of wide-area specialty crop data communication systems Integration of decision-making software Development of design, manufacturing and usage education modules for use in university and continuing education learning	Modernized, mechanization compatible crop production designs Research publications in the design of specialty crop technologies Specialty crop technology development to address immediate labor and crop intelligence needs of specialty crop industry Training of graduate and undergraduate students in the design and concepts of specialty crop automation technologies	Industry adoption of compatible crop production designs Research and extension publications on commercial field trials with specialty crop technologies Workshops and other continuing education opportunities for practicing scientists and engineers Manufacturing workforce (design engineers, mechanics, operators) better prepared to manufacture and use automated equipment for specialty crop production and handling	Industry adoption of labor saving and crop intelligence technologies matched to production systems Specialty crop technology development to address long-term labor and crop intelligence needs of specialty crop industry Efficient and safe work environment for specialty crop production and handling workforce Competitive advantage for domestic specialty crop producers from increasing labor efficiency and crop intelligence systems