Evaluation Plan

The Rucks Group, in partnership with the project PI/Co-PIS, will serve as the external evaluator for this project. The Rucks Group, a research and consulting firm that gathers, analyzes, and interprets data to enable their clients to measure the impact of their work. Dr. Lana Rucks, Principal Consultant with the Rucks Group, will manage the overall project evaluation. Dr. Rucks has extensive professional and educational experience within research, program evaluation, and measurement. She has led several evaluative initiatives including projects funded by the National Science Foundation and the Center for Disease Control. She possesses deep expertise in rigorous research methodology, evaluation design & implementation, and data analysis (including qualitative and quantitative analysis). Dr. Rucks has regularly attends the annual NSF ATE PI Conference and has delivered numerous webinars on evaluation strategies. Dr. Rucks holds a doctorate degree in Social Psychology with a concentration in quantitative methods from The Ohio State University (OSU). She also holds two Master of Arts degrees within Social Psychology and Experimental Psychology from OSU and the University of Dayton, respectively.

At project initiation, the Rucks Group will meet with the project PI/Co-PI(s) and other key individuals to fully detail the evaluation questions, design, plan, and overall work plan. (See attached logic model.)

The overall evaluation will be driven by formative and summative evaluative questions that will be fully detailed at project initiation. The general topics of the evaluation questions are as follows:

- Were stated goals and objectives achieved?
- How were the original activity objectives achieved?
- Are the products being disseminated? Are the products being used within other automotive training programs?
- What is the projected budget vs. actual expenditures?
- What is the estimated return on the investment of federal funds?
- What were the significant unanticipated outcomes?

Quantitative and qualitative data will be collected through a mixed methods approach (Stevens, Lawrenz, and Sharp, 1992; Frechtling & Sharp, 1997) to gather evidence of the outcomes and impact of the project Institutional and project level data will be collected.. These data will be collected using the following methods: Additional data will be collected using the following methods:

- **Surveys and questionnaires**
- **Focus groups and interviews** (of academic managers participating in testing and training events) to determine for example satisfaction with the decision-support tool and perceived decision-making gains resulting from using the tool.
- **Mentor evaluations (**of student interns from the TechLINK cooperative experience)
- **Document studies** (internal evaluation reports, college reports, minutes from project meetings, *etc.*).

Formative Evaluation

During each year of the grant, staff members of the Rucks Group will employ extensive formative evaluation methods. Ongoing procedures will ensure that milestones within the implementation strategies are met and that the activities are within budget. The formative evaluation will be a neutral, candid assessment of the likelihood of successful completion of the objectives based on past progress. Formative evaluation will focus on giving feedback to personnel as the grant progresses as to how processes might be improved. Baseline data for each objective will be collected during the first year of the grant. Progress will be tracked against the baseline for future years.

Summative Evaluation

Summative evaluation will occur as outcomes data becomes available which is anticipated to be at the

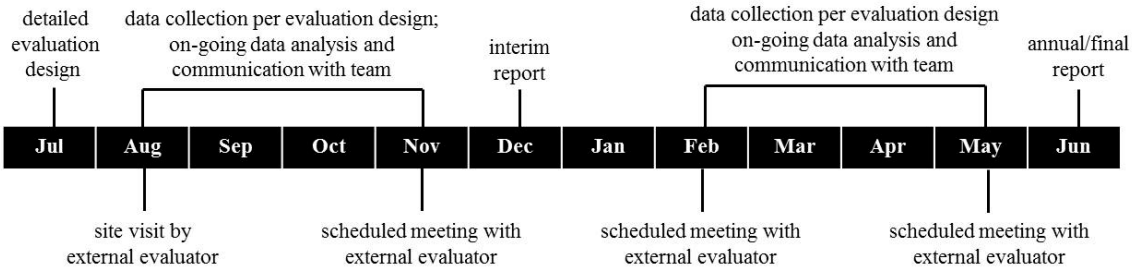
conclusion of the grant fiscal year. Staff members of the Rucks Group will manage the summative evaluation, analyze the outcomes, and assess the level of integration of the decision-support tool at the partner institutions. The summative evaluation will be a neutral, candid assessment that will focus on whether the project will meet the following:

Summary Evaluation Matrix		
Deliverable #1: Four modified courses enhanced with additional focus on alternative energy leading to AAS Degree in Automotive Technology and Master Automotive Service Technician Certificate (MAST)		
Data Collection Method	**Schedule**	**Evaluation Type**
Survey faculty & review progress	1/2017, 1/2018, 1/2019	Formative
Focus groups with faculty	3/2017, 3/2018, 3/2019	Summative
Interview industry advisory committee	4/2017, 4/2018, 4/2019	Formative/Summative
Review student enrollment data for trends before and after project activities	6/2017, 6/2018, 6/2019	Summative
Deliverable #2: Two new courses for Advanced Hybrid and Alternative Fueled Vehicles (CNG, H2, etc.) developed and leading to new Alternative Energy Diagnosis & Repair Certificate.		
Data Collection Method	**Schedule**	**Evaluation Type**
Survey faculty & review progress on Job Skills Analysis	7/2016, 1/2017	Formative/Summative
Survey faculty & review progress on new course development	1/2018, 1/2019	Formative
Focus groups with faculty	3/2018, 3/2019	Summative
Interview industry advisory committee	4/2018, 4/2019	Formative/Summative
Review student enrollment data for trends before and after project activities	6/2018, 6/2019	Summative
Deliverable #3: Summer workshop for first responders to understand safety concerns with hybrid and alternative fuel vehicles.		
Data Collection Method	**Schedule**	**Evaluation Type**
Counterfactual survey high school faculty & review progress	6/2018, 6/2019	Formative
Deliverable #4: Fall workshop for high school faculty to understand emerging trends in Alternative Energy Automotive Technology education.		
Data Collection Method	**Schedule**	**Evaluation Type**
Counterfactual survey of first responders & review progress	10/2017, 10/2018	Formative

Data collection efforts will seek to obtain evidence of implementation of the deliverables (e.g., an implementation analysis) and the project's outcomes. The strength of the evidence supporting the outcomes will provide answers to the evaluation questions. The evaluation will follow appropriate evaluation standards set forth by the American Evaluation Association, NSF, Columbus State Community College Institutional Review Board (IRB) policies, and other relevant policies.

Because of the credibility associated with data collected through experimental and quasi-experimental (Donaldson, Christie, & Mark, 2009) evaluative approaches, these methods will be utilized as allowable given the boundaries of the project to gather credible evidence of the difference the project is making. In situations in which experimental and quasi-experimental methods are not feasible, use of pre-/post-surveys, case studies, interviews, and document reviews will be incorporated into the evaluation design.

Evaluation activities will adhere to the following annual timeline:



The Rucks Group will communicate with the project team both through periodic meetings as well as written interim and annual reports that will provide information and an analysis of the project tasks, project outcomes, and an interpretation of results.