Students: Phillip Latka
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Title: The Design of a Low-Cost and Robust Linkage Position Sensor

Advisors: Dr. Sanchez
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Acronym: lcrlps

University Logins: platka
lvernon

Description: The current position sensor Caterpillar uses in their equipment is expensive and is not robust enough to withstand the stress that comes with daily use of a Caterpillar machine. Caterpillar has therefore approached Bradley University to design an alternative system that would be precise, robust, and maintain a low cost. Students from the Mechanical Engineering, Electrical Engineering, and Business departments will work together on this design project as part of Bradley University's convergence initiative. The electrical engineering students will conduct initial research on existing sensor systems and sensor technology in order to develop possible replacements. The electrical engineering and mechanical engineering students will work closely during the development stage to understand both the physical and technical limitations of each design. After research is complete, small-scale prototypes of the most viable design options will be created and tested by the electrical and mechanical engineering students. These tests will be modeled based on real life situations in which the sensors would have to work while in a Caterpillar machine. During the development and testing process, members of the business team will perform cost analysis and construct business models for each of the tested designs. By combining the results from the engineering tests and the business simulation, a final design that best satisfies Caterpillar's specifications will be presented to Caterpillar for further consideration.