Physics Student Seminar

Wednesday 3/30/2011, 4:30 pm
Science & Engineering Building Auditorium

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Mercer University School of Engineering

Undergraduate Engineering Honors Research

The Engineering honors program at Mercer University allows students to undertake a self guided research project each year. Two of these projects will be discussed. Interdisciplinary cooperation opportunities will be explored between the Physics Department and the School of Engineering Honors Program, building on Dr. Lee’s Seminar on March 16, 2011.

The first project focuses on the feasibility of storing energy in a flywheel and the transmission system necessary to smoothly introduce and remove energy from the system. The transmission system is a relatively basic Continuously Variable Transmission employed using a drive belt between two pulleys of variable diameter. If this system were to be installed on an automobile, it could be used to store during braking and retrieve during acceleration the vehicle’s kinetic energy. This would effectively create a mechanical regenerative braking system.

The second project involves research of the Biochemical Oxygen Demand (BOD) and Chemical Oxygen Demand (COD) properties of various laundry detergents. Gray water reuse is becoming more popular as many are trying to reduce the negative impact they have on the earth, however gray water is not easily collected for testing. A synthetic formula has been released to create this gray water for testing, but many of the ingredients are not specific. Laundry detergent is one of the ingredients in this formula, but it is not specified whether to use liquid or powder, regular or double strength, or scented or free and clear detergent.

Please join us for light refreshments at 4:15pm outside SEB 203.