

**Kenneth W. Van Treuren**

*Energy Alternatives for the Future: Wind Turbines and Rooftop Gardens*  
(Mechanical Engineering/Engineering and Computer Science)

With economic uncertainty facing the global community, understanding energy, where it comes from, and how it is used, has become increasingly important and will continue to be so in the future. This need led to the development of an energy literacy class Engaged Learning Group (ELG) for incoming freshmen that revolves around the topic of energy and its associated societal, political, environmental and economic threads. The course met one semester hour for four semesters. The first two semesters gave the students the necessary background with energy. The third semester looked in more detail at issues raised by the students themselves and led them through a process to develop a research proposal in an energy related area. The last semester saw the students work on the research project they proposed. Two of the student projects, the wind turbine site survey and the rooftop gardens, were begun during this class but not completed. The wind turbine site survey was begun at Region 12 Service Center off Highway 6 near the Texas Central Market place. This site is one of the highest locations in Waco, giving it the greatest probability of successfully placing a wind turbine. Discussions were started by the ELG student, Callie Redding, with West Texas A&M University to accomplish a proper wind site survey, necessary for the final site evaluation. This survey would be accomplished by erecting a tower and measuring wind velocity at several heights. Dr. David Carr from West Texas A&M University is willing to work with Baylor to accomplish the survey. For the rooftop garden, this ELG student, Katie Barney, is starting an honors project to continue to test the hypothesis concerning the effects of different roofing materials and plant groups. This project is being conducted at Eastland Lakes. Funds are requested to continue these two projects.