Several cities are undertaking expensive parking management and pricing programs. For example, San Francisco has recently deployed a $20 million parking information and pricing program called SFPark.

The goal of this proposal is to develop an inexpensive parking information and management system by leveraging Vehicle-to-Vehicle (V2V) and Vehicle-to-Infrastructure (V2I) communications.

Our approach to leveraging V2V and V2I to develop a parking management system extends our previous work in parking management systems. We have developed a novel parking prediction scheme. We propose using data from V2V and/or V2I to infer the three key inputs used in our previous research. Each driver looking for parking has a belief about the current availability of parking. When the driver comes into contact with other drivers, updates his belief about the current availability of parking.

Desired Outcomes and Metrics
**Year 1**: (a) Development of V2V and V2I Parking Inference Algorithms. (b) Submission of journal article documenting the aforementioned algorithms.
**Year 2**: (a) Deliver Prototype Parking Inference Platform. (b) Complete CMU Campus Pilot of V2I algorithms.

Capabilities and Experience
**Lead**: Prof. Robert Hampshire (CMU). He has published several peer-reviewed papers on smart parking. His prior work on smart parking has been awarded the ITS Spotlight Award in October 2011. His previous research on smart parking has been supported by an NSF CAREER award.

This research is funded in part by the U.S. Department of Transportation’s University Transportation Centers Program.