

## COLLOQUIUM SERIES

TITLE:

# MobiSteer: Using Steerable Beam Directional Antenna for Vehicular Network Access

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### ABSTRACT:

Broadband wireless network access from moving vehicles is an emerging area of interest. WiFi technology provides a great potential for such access because of its ubiquity and operation in unlicensed spectrum. However, the performance of WiFi-based communication between a moving vehicle and roadside access points (APs) is often unacceptable, because of poor link quality and frequent handoffs. In the *MobiSteer* project, we are addressing this problem using directional antennas and beam steering techniques. In this talk, I will describe practical approaches for beam steering and how they can improve the communication between the moving vehicle and roadside APs. I will demonstrate the performance potential using extensive experimental results with a commercially available eight element phased-array antenna. As an aside, I will also describe how *MobiSteer* can be used to localize roadside APs located outdoors or inside buildings. This can provide useful data to researchers interested in modeling chaotic deployment of WiFi APs in urban areas. Finally, I will show how the *MobiSteer* concept is useful also in the context of vehicle-to-vehicle links.

### Bio:

Samir R. Das is currently an Associate Professor in the Computer Science Department in the State University of New York at Stony Brook. He received his Ph.D. in Computer Science from Georgia Institute of Technology, Atlanta, in 1994. His research interests are in wireless networking and mobile computing, focusing on protocols, systems and performance evaluation. He received the U.S. National Science Foundation's CAREER award in 1998 and the best paper award in *ACM MobiSys* conference in 2007. He has been a speaker in the Distinguished Visitor program of the IEEE Computer Society during 2001-03. He co-chaired the technical program committee for the *ACM MobiHoc Symposium* in 2001 and *ACM MobiCom Conference* in 2004. He currently serves or has served on the editorial board of the *IEEE/ACM Transactions on Networking*, *IEEE Transactions on Mobile Computing*, *ACM/Kluwer Wireless Networks Journal* and *Ad Hoc Networks* journal.

**2:00 - 3:00pm, Friday, February 29, 2008**

**Dunn Hall 233, The University of Memphis**

**\*RECEPTION @ 3:05PM IN DH COMMONS ROOM #336\***

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