

Talk Title: MANET Simulation Studies: The Incredibles

Speaker: [Tracy Camp](#)

Affiliation: Colorado School of Mines

Venue: St. Pats Ballroom B

Time: Jan' 23rd Friday, 11:00 to 12:00pm

Abstract:

Simulation is the research tool of choice for a majority of the mobile ad hoc network (MANET) community. However, while the use of simulation has increased, the credibility of the simulation results has decreased. To determine the state of MANET simulation studies, we surveyed the proceedings of a top conference in the MANET area: the ACM International Symposium on Mobile Ad Hoc Networking and Computing (MobiHoc). From our survey, we found significant shortfalls.

Choosing an appropriate simulation scenario to study the performance of a MANET routing protocol is an important process. For example, routing will not be properly evaluated when a simulation scenario with a low average hop count or a large degree of network partitioning is used. To ensure that a simulation scenario provides an effective platform for testing a MANET routing protocol, we recommend that researchers use two metrics to characterize their simulation scenarios: the average shortest-path hop count and the average amount of network partitioning.

In this talk, I will (1) present the results of our MobiHoc survey, (2) summarize common simulation study pitfalls found in our survey, and (3) discuss tools that we have created to aid the development of more rigorous simulation studies. While this work focuses on the MANET field, the takeaway message is applicable to other computing fields.

Bio:

Tracy Camp is a Professor of computer science at the Colorado School of Mines. She is the Founder and Director of the Toilers (<http://toilers.mines.edu>), an active ad hoc networks research group currently consisting of four faculty members, 12 graduate students, and five undergraduate students. Her current research concerns (1) adaptive routing schemes for ad hoc networks, (2) interaction studies of cross-layer ad hoc network protocols, (3) the credibility of ad hoc network simulation studies, and (4) collision resolution protocols for wireless communications. Her articles have been cited over 2,500 times (per Google Scholar, as of June 2008).

Dr. Camp has received 13 grants from the National Science Foundation, including a CAREER award in 1997. This funding has produced 12 software packages that have been requested from (and shared with) more than 1300 researchers in 64 countries (as of June 2008). Dr. Camp is an ACM Distinguished Lecturer, an IEEE Senior Member, and an ACM Distinguished Scientist. In 2006, Dr. Camp was a Fulbright Scholar in New Zealand. In December 2007, Dr. Camp received the Board of Trustees Outstanding Faculty Award at the Colorado School of Mines, an award that has only been given five times between 1998-2007. Dr. Camp is currently the elected Treasurer of ACM's Special Interest Group on Mobile Computing (SIGMOBILE).