2013-2014 CS/Networked System Seminar Series

**Title:** Elements of Trust in Named-Data Networking

**Speaker:** Gene Tsudik, Computer Science Department, University of California, Irvine

**Date:** Friday, April 18, 2014 at 11:00 AM – 12:00 PM

**Location:** DBH 6011

**Abstract:** In the last 4-5 years, several major research efforts have sprung up aiming to design a set of potential next-generation Internet architectures. N**amed Data Networking (NDN)** is one such effort. NDN avoids IP's host-based, point-to-point networking approach in order to better accommodate  new and emerging patterns of communication. NDN treats data as a first class object, explicitly naming it, instead of its location. Unlike the current Internet which secures the communication "pipe" between hosts, NDN secures data -- a design choice that decouples trust in data from trust in hosts, thus enabling scalable communication mechanisms, such as data caching in routers to optimize bandwidth. NDN poses many interesting security and privacy challenges, including: trust management, DoS resilience as well as content protection and privacy.

This talk will start with a brief overview of NDN and a summary of various security and privacy issues. The focus will be on network-layer trust management. Motivated by the need to mitigate so-called "content poisoning" attacks, we explore the design of a trust management architecture for NDN.

**Bio:** Gene Tsudik is a Chancellor's Professor of Computer Science at the UC Irvine (UCI). He obtained his PhD in Computer Science from USC in 1991. Before coming to UCI in 2000, he was at IBM Zurich Research Laboratory (1991-1996) and USC/ISI (1996-2000). Over the years, his research interests included numerous topics in security, privacy and applied cryptography. Since 2009, he serves as the Editor-in-Chief of ACM Transactions on Information and Systems Security (TISSEC). He's a former Fulbright Scholar and an IEEE Fellow. This is his first seminar talk in 14 years at UCI.

**Host:** Eli Bozorgzadeh, Associate Professor, Computer Science Department