Colloquium

University of Texas at Arlington - Department of Mathematics
Proudly Presents:

Dr. Nick Hengartner
Los Alamos National Laboratory
Friday, October 26, 2018
3:00pm – 4:00pm
311 Pickard Hall

Sensing Swarms for Environmental Threat Reconstruction

Abstract: Aedes Aegypti, a mosquito that transmits Zika, Dengue and Chikungunya, form nearly stationary clouds. I will discuss how to find infectious clouds using GPS tracks from a sample healthy and infected individuals. This is a tomographic reconstruction problem, but on jagged paths, and noisy (binary) outcome variables. I will present a framework to enable such a reconstruction, and discuss how one can identify what features are easy to estimate and what features are hard in that framework.

This talk will touch on statistical concepts, such as nonparametric maximum likelihood and ridge regression and LASSO, and statistical inverse problems, and we will make use of basic ideas in functional analysis, such as reproducing kernel Hilbert spaces and the projection theorem.

Short Bio: Dr. Nick Hengartner received his MS in Statistics from the University of Waterloo in 1988 and his Ph.D. in Mathematical Statistics and Probability from the University of California, Berkeley in 1993. Currently, Dr. Hengartner is the Group Leader of the Theoretical Division T-6: Theoretical Biology and Biophysics at Los Alamos National Laboratory. His research interests include statistical modeling, nonparametric smoothing, statistical inverse problems, application of stochastic modeling to epidemics, particle transport, metagenomics and electricity consumption modeling. He is a very well accomplished scholar and has published over 200 peer-reviewed journal articles and technical reports.

Refreshments before the talk and socializing following the talk
http://www.uta.edu/math/seminars