Department of Mathematical Sciences welcomes

Stefanos Folias
University of Alaska Anchorage

Spatially-Structured Equilibria, Oscillations, and Waves in Neural Fields

ABSTRACT:

Neural fields are spatially-extended, nonlinear integrodifferential equations that aim to represent the large-scale dynamics of populations of neurons which are governed by synaptic interactions between neurons as well as other slow neuronal processes. These neural field equations support a wide range of spatiotemporal dynamics, including spatially nonuniform equilibria, spatially-structured oscillatory patterns, and traveling waves. One approach to studying these structures is using dynamical systems and bifurcation theory. I will use this approach to study the different patterns of activity that arise as a result of different types of synaptic interactions in a family of fundamental networks.

ABOUT THE SPEAKER:

Dr, Stefanos Folias is an Associate Professor in the Department of Mathematics at the University of Alaska Anchorage (UAA). He received his Ph,D. in Mathematics from the University of Utah in 2005. Prior to joining UAA, he held postdoctoral positions in the Department of Mathematics & Statistics at Boston University where he was affiliated with the Center for Biodynamics and also in the Department of Mathematics at the University of Pittsburgh where he was part of the Complex Biological Systems Group. His research interests lie in the fields of mathematical neuroscience as well as spatiotemporal nonlinear dynamical systems.

October 25, 2019

Hosted by:
Prof. Julia Arciero

Tea begins at 3:00
in LD 259

Research Topic
begins at 3:30
in LD 229

STATISTICS & THEIR APPLICATIONS - IUPUI - WORLD RENOWNED RESEARCHERS EXPLORING MATHEMATICS
MATH COLLOQUIUM