UCF/USF special workshop on:

Complex Analytic Methods with Applications in Orthogonal Polynomials, Integrable Systems, and Random Matrix Theory

February 25 & 26, 2023
Welcome and Coffee–Saturday, February 25 at 12:00 PM

Hosted By:
University of Central Florida
Department of Mathematics

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Abstract

Orthogonal polynomials, integrable systems, and random matrix theory are classical subjects at the interface of analysis and mathematical physics. Remarkably, over the last three decades by using complex analytic methods fundamental relationships between these seemingly disparate topics have been discovered. The goal of this workshop is to: (i) bring together researchers from University of Central Florida and University of South Florida working in orthogonal polynomials, integrable systems, and random matrices; (ii) showcase some of the important developments and applications; (iii) foster collaboration between the two universities; and (iv) expose graduate students in analysis to the field and some of its leading experts.

Location: All seminars will be held in **MSB 406**.

Schedule:

Saturday, February 25 (12:00 PM Welcome coffee)

12:30 PM	Xin Li	Opening remark by Math Department Chair at UCF
12:40 PM	Alexander Tovbis (UCF)	Recent developments in spectral theory of soliton gases for integrable equations.
1:30 PM	Robert Jenkins (UCF)	TBA
2:20 PM	Wen-Xiu Ma (USF)	Nonlocal integrable equations and their related Riemann-Hilbert problems.
3:10 PM	Break	
3:40 PM	Razvan Teodorescu (USF)	SLE, Or Sturm-Liouville Entropy
4:30 PM	Seung-Yeop Lee (USF)	Criticalities in Random Normal Matrices.

Sunday, February 26 (8:30 AM Coffee/Breakfast)

9:00 AM	Constance Schober(UCF)	Nonlinear damped spatially periodic breathers and the emergence of soliton-like rogue waves.
9:50 AM	Abey Lopez-Garcia (UCF)	Non-standard Green energy problems in the complex plane.
10:40 AM	Dmitry Khavinson (USF)	*" It is useful to solve extremal problems "* -Almost I. Newton
11:30 AM	Lunch	
1:00 PM	Erik Lundberg (FAU)	Arclength null quadrature domains.
1:50 PM	Evguenii Rakhmanov (USF)	Hermite-Pade approximation, equilibrium problems and Riemann surfaces.
2:40 PM	Nathan Hayford (USF)	The Ising model coupled to 2D gravity.