



STEAM-H SEMINAR MATHEMATICAL SCIENCES & APPLICATIONS

School of Engineering, Science and Technology Department of Mathematics & Computer Science

Objective: The seminar aims at providing a forum for students and faculty to present and discuss research in the Mathematical Sciences. The emphasis is on applications in Engineering, Physical-chemistry, Nanotechnology, Life sciences, Computer Science, Logistics/Human Factors, Systems Dynamics/Analysis, Game Theory, Psychology, Finance/Economics. The seminar has a multidisciplinary audience of Faculty and Students. It intends to foster student interest in the STEAM-H and to stimulate graduate/undergraduate research and collaboration between researchers on an interdisciplinary basis. To ensure a thematic continuation the proceedings will be published. The first Volume has been submitted to Springer.

Fall 2011 Series

Friday, September 9: Dr. Zhifu Xie.
Department of Mathematics.
Virginia State University VA
Title: Central Configuration of the N-Body Problem
and Spacecraft Orbital Design

Friday, September 16: Dr. Gaston N'Guerekata
Professor, Department of Mathematics
Morgan State University, Baltimore MD
Title: Cauchy Problems for some Fractional Differential
Equations with Nonlocal Conditions.

Thursday, September 22: Dr. Stephen Schecter.
Professor, Department of Mathematics,
North Carolina State University, Raleigh NC
Title: How the Talmud Divides an Estate Among Creditors

STEAM-H SEMINAR MATHEMATICAL SCIENCES & APPLICATIONS

- Friday, September 30:** Dr. Daniel Vasiliu.
Department of Mathematics,
Christopher Newport University, Newport News VA
Title: Mathematics Behind Microstructures
- Friday, October 7:** Dr. Toka Diagana.
Professor and Director of Graduate Programs
Department of Mathematics
Howard University, Washington DC
Title: Existence Results for Some Higher-Order Non-Autonomous Abstract Differential Equations and Applications
- Friday, October 14:** Dr. Kostadin Damevski.
Department of Mathematics and Computer Science
Virginia State University VA
Title: Graphics Processing Units for General Purpose Computational Tasks
- Friday, October 21:** Dr. Candace Kent.
Department of Mathematics and Applied Mathematics
Virginia Commonwealth University, Richmond VA
Title: Global Behavior of Solutions of a Periodically Forced Sigmoid Beverton-Holt Model.
- Thursday, October 27:** Dr. Jonathan Ransom.
Head, Durability, Damage Tolerance & Reliability branch
NASA Langley Research Center, Langley VA
Title: Recent Advances in Durability and Damage Tolerance Methodology at NASA Langley Research Center
- Friday, November 4:** Dr. Weidong Mao.
Department of Mathematics and Computer Science
Virginia State University VA
Title: A Distance-Based Cluster Algorithm for Genomic Analysis in Genetic Disease

STEAM-H SEMINAR MATHEMATICAL SCIENCES & APPLICATIONS

Thursday, November 10: General Audience: 12:30 Dr. Anura Goonewardene

Professor and Director of Nanotechnology

Department of Geology and Physics

Lock Haven University, Lock Haven, PA

Title: 21st Century Nanotechnology Revolution

Thursday, November 10: Faculty Audience: 5:00pm Dr. Anura Goonewardene

Professor and Director of Nanotechnology

Department of Geology and Physics

Lock Haven University, Lock Haven, PA

Title: Nanotechnology Undergraduate Education at Lock Haven University

Friday, November 11: General Audience: 12:00 Dr. Winston Soboyejo.

Professor, Department of Mechanical & Aerospace Eng.

Director of PRISM Undergraduate Program (Princeton Institute for the Science and Technology of Materials)

Princeton University, Princeton NJ

Title: New Frontiers in Nanotechnology

Friday, November 11: Faculty Audience: 5:00pm Dr. Winston Soboyejo.

Professor, Department of Mechanical & Aerospace Eng.

Director of PRISM Undergraduate Program (Princeton Institute for the Science and Technology of Materials)

Princeton University, Princeton NJ

Title: Undergraduate Program at Princeton

Friday, November 18: Dr. Ellen Bass.

Department of Systems and Information Engineering

University of Virginia, Charlottesville VA

Title: Using Task Analytic Behavior Models and Model Checking to Evaluate Human-automation Interaction

Friday, November 25: **THANKSGIVING: No Presentation**

STEAM-H SEMINAR MATHEMATICAL SCIENCES & APPLICATIONS

Tuesday November 29: Professor Emeritus Constantin Corduneanu
Department of Mathematics
University of Texas, Arlington, TX

Distinguished Lecture:

**Title: A Glimpse on Fourier Analysis and its Generalizations;
Periodicity, Almost periodicity and Oscillatory Functions**

Wednesday, November 30. (Faculty Audience) Prof. Emeritus Constantin
Corduneanu (*Continued*)

Department of Mathematics

University of Texas, Arlington, TX

**Title: A survey on Periodicity, Almost periodicity and Oscillatory
Functions**

Friday, December 2: Dr. Raymond Fletcher.
Professor, Department of Mathematics & Computer Science
Virginia State University VA
**Title: Perfect Hexagons, Elementary Triangles and the Center
of a Cubic Curve.**

Spring 2012 Series

Friday, January 20: Dr. Alfred Burress
Manager, Power Development for System x and Blade Center
*IBM Corporation, 3039 Cornwallis Road
Research Triangle Park, NC*
Title: Autonomic Computing

Friday, January 27: Dr. Earl Barnes.
Professor Emeritus, Department of Mathematics
Morgan State University, Baltimore MD
**Title: Matrix Inequalities and Combinatorial
Optimization Problems**

STEAM-H SEMINAR MATHEMATICAL SCIENCES & APPLICATIONS

- Friday, February 3:** Dr. Kayvan Najarian.
Computer Science & Emergency Medicine
VCU Reanimation Engineering Science Center (VCURES)
Director, VCU Biomedical Signal and Image Processing Group
Virginia Commonwealth University
Title: **Signal/Image Processing and Machine Learning; The Key to Complex Problems in Medicine and Biology**
- Friday, February 10:** Dr. Yafang Wang
Asper School of Business
University of Manitoba, Winnipeg, Canada
Title: **The Distribution of the Number of IBNR Claims**
- Friday, February 17:** Dr. Junping Shi
Department of Mathematics
College of William & Mary, Williamsburg VA
Title: **Bifurcation and pattern formation in spatial predator-prey systems**
- Friday, February 24:** Dr. Xiaofeng Ren
Professor, Department of Mathematics
George Washington University, DC
Title: **Ansatz solutions to a problem of Mean Curvature and Newtonian Potential**
- Friday, March 2:** Dr. Eshan Sheybani
Department of Computer Engineering
Virginia State University, VA
Title: **An Algorithm for Real-Time Noise Cancellation in Wireless Sensor Networks**
- Friday, March 9:** Dr. Milton O. Faison
Department of Biology
Virginia State University, VA
Title: **Differences in Brain Activity associated with Reasoning Ability: Preliminary Results from Functional imaging studies**

STEAM-H SEMINAR MATHEMATICAL SCIENCES & APPLICATIONS

Friday, March 16:

SPRING BREAK: No Presentation

Friday, March 23:

Dr. John Adam.

Professor, Department of Mathematics and Statistics.
Old Dominion University, Norfolk, VA

Title: Direct and Inverse Problems for Radially Inhomogeneous Spheres, With Application to Rainbow Refractometry and Optical Fiber Studies.

Friday, March 30:

Dr. Valeriu Soltan

Professor, Department of Mathematical Sciences
George Mason University, Fairfax, Virginia

Title: Convex Quadrics

Friday, April 6:

Dr. Afsaneh Rabiei. (Canceled; HBCU-UP Conference)

Department of Mechanical & Aerospace Engineering
North Carolina State University, Raleigh, NC

Thursday, April 12:

Dr. Zhifu Xie

Department of Mathematics and Computer Science
Virginia State University

Title: Central Configurations, Planet Dancing with Two Stars and Spacecraft Orbits

Friday, April 13. (12:00)

Dr. Wenxiang Sun

Professor, School of Mathematical Sciences.
Peking University, Beijing, China

Title: Flows with Singularity: Entropy and Growth Rate of Periodic Points

Friday, April 13: 01:00:

Dr. Paul Bezandry

Department of Mathematics
Howard University, Washington DC

Title: Almost Periodic Random Sequences and their Applications to Stochastic Difference Equations



STEAM-H SEMINAR MATHEMATICAL SCIENCES & APPLICATIONS

- Thursday, April 19:** **Dr. Nasser Ghariban**
Professor and Chair, Department of Engineering,
Virginia State University
**Title: The Galerkin Method Solution of Heat Transfer
Problems for Internal Fluid Flow in channels.**
- Friday, April 20:** Dr. Tomohiko Yamaguchi.
Professor and Deputy Director
NanoSystems Research Institute
Advanced Industrial Science and Technology (AIST)
Tsukuba, Tokyo, Japan
Title: Self-Organization of Spirals
- Friday, April 27:** **Dr. Lennard Bakker**
Department of Mathematics
Brigham Young University, Provo, UT
**Title: Understanding the Dynamics of Collision and near-
collision motion in the N-body problem**