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
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

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