CEE Past Seminars

2023-2024 SEMINAR SPEAKERS

Dr. Jin-Song Pei
Associate Professory, Civil & Environmental Science, University of Oklahoma
"Mem-Models: A New Hysteresis Model Class for Path-Dependency, Internal Damage, & Recovery"

Dr. Will Coombs
Professor in Computational Mechanics, Department of Engineering, Durham University
"Simulation of Large Deformation Solid Mechanics via the Material Point Method"

Dr. Jennifer Guelfo
Assistant Professor, Edward & Linda Faculty Fellow, Civil, Environmental, & Construction Engineering, Texas Tech University
"The Dirty Side of Clean Energy: Lithium Ion Batteries as a Source of PFAS in the Environment"

Dr. Nikola Blagojevic
Postdoctoral Scholar, Chair of Structural Dynamics & Earthquake Engineering, WTH Zurich, Switzerland
"A Novel Framework for Regional Post-Disaster Recovery Modeling & Resilience Assessment of the Built Environment"

Dr. Brian Eick
Program Manager & Technical Lead for Structural Health Monitoring, Engineer Research & Development Center of the US Army Corps of Engineers
"Development of Structural Health Monitoring Technologies for Waterborne Transporation Infrastructure"

2022-2023 SEMINAR SPEAKERS

Dr. Pavana Prabhakar

Charle G. Salmon Associate Professor, Mechanical Engineering, Civil & Environmental Engineering, University of Wisconsin-Madison

"Advanced Manufacturing & Mechanics of Architected Polymer Composites"

Ms. Diana Alarcon & Mr. Brad Freeze

Director / Chief Engineering, Department of Transportation & Multi-Modal Infrastructure, City of Nashville

"The Nashville Department of Transportation & Multimodal Infrastructure; Not Just A Name Change"

Dr. Wil Burns

Visiting Professor, Environmental Policy & Climate Program, Northwestern University

"Ocean-Based Carbon Dioxide Removal Approaches: Promise & Challenges"

Emerging Scholars Series: Dr. Somdatta Goswami

Assitant Professor (Research), Applied Mathematics, Brown University

"Scientific Machine Learning: Research at the Intersection of Mathematics, Computing, and Data"

Dr. Nichole Jackson

Senior Member of Technical Staff, Sandia National Laboratories

"Extreme Weather Drivers During Power Outages & Equity Considerations for Future Grid Expansion Planning in the United States"

Dr. Lin Meng

Assistant Professor, Earth & Environmnetal Sciences, Vanderbilt University

"Green with Phenology - A Warmer & Brighter City Trick Trees into Thinking Spring Arrives Earlier"

Dr. Srinivasan Gopalakrishnan

Professor, Aerospace Engineering, Indian Institute of Science, Bangalore, India

"Deep Learning Approaches for Ultrasonic Guided Wave Based SHM Applications"

Dr. John Vick

Director, Office of Primary Prevention, Tennessee Department of Health

"Building Healthy Communities: Defining Public Health's Role in Shaping the Built Environment"

Emerging Scholar Series: Dr. Meghana Ranganathan

NOAA Climate & Global Change Postdoctoral Fellow, Georgia Institute of Technology

"Ice Sheet Change: A Microstructural Perspective"

Dr. Vinamra Agrawal

Assistant Professor, Aerospace Engineering, Auburn University

"Applications of Graph Neural Networks for Emulating & Acclerating Fracture Mechanics Problems"

Special Seminar: Dr. Mitchell J. Small

Professor Emeritus, Civil & Environmental Engineering / Engineering & Public Policy, Carnegie Mellon University

"Human-Environmental Systems: Subtle Causal Relationships, High Variability, Pervasive Uncertainty, Limited Data, & Imperfect Measurements...Perfect for a New Multidiscipline"

Special Seminar: Dr. Wayne Truter

Professor & Research Director of Forage, Pasture & Land Regeneration Sciences, Department of Plant & Soil Sciences, University of Pretoria

"Phytomining & Hyperaccumulation of Constituents of Potential Concern & Value that Deem Vegetation Grown on Rehabilitated Soil or Irrigated with Mine Water Unsafe for Use"

2021-2022 SEMINAR SPEAKERS

Ms. Brooke Mason

Ph.D. Candidate, Civil & Environemtnal Engineering, University of Michigan

"Autonomous Control of Stormwater Quality"

Dr. Jack (Ke) Ding

Postdoctoral Research Scientist, Geological & Atmosphereic Sciences, Iowa State University; Investigator (External), Driving Water Justice Lab, Vanderbilt University

"Wandering in Human-Natural Systems: Seeking Pathways to a Sustainable Future Under Anthropogenic Challenges & Climate Change"

Special Seminar: Dr. Guney Olgun

Assistant Professor of Civil, Architectural & Environmental Engineering, Missouri University of Science & Technology

"Multi-Scale Modeling of Geomaterials"

Dr. Xing Gie

Assistant Professor, Carlton S. Wilder Junior Professor, Civil & Environmental Engineering, Georgia Institute of Technology

"Opening the 'Black Box' of Leeft for Water Disinfection"

Dr. Carolyn Pearce

Scientist, Subsurface Systems; Director, Idream Energy Frontier Research Center, Pacific Northwest National Laboratory

"Surface Characteristics of Ancient Glass Analogues for Long-Term Disposal of Vitrified Radioactive Waste"

Dr. David Rounce

Assistant Professor, Civil & Environmental Engineering, Carnegie Mellon University

"Projected Twenty-First Century Global Glacier Mass Change & its Impact on Society"

Dr. Lavanya Marla

Assistant Professor, Industrial & Enterprise Systems Engineering, University of Illinois at

Urbana-Champaign
"The Role of Good Predicitions in Optimizing Airline Disruption Management: How much is 'Good Enough'?"

Dr. Sarah Ledford
Assistant Professor, Department of Geosciences, Georgia State University
"The Impacts of Urban Infrastructure on Hydrology & In-Stream Biogeochemistry"

Emerging Scholars Series: Dr. Neha Patankar
Postdoctoral Research Associate, Andlinger Center for Energy & the Environment, Princeton University
"Evaluating Technology & Resource Tradeoffs in Decarbonizing the American West"

Mr. David Cummins
President & Executive Director, Blue Sky Maritime Coalition
"Decarbonizing the North American Marine Shipping Sector: Challenges & Opportunities Through a Private Sector Approach"

Dr. Jinyong Liu
Assistant Professor, Chemical & Environmental Engineering, University of California Riverside
"Degradation of Per- & Polyfluoroalkyl Substances (PFAS): Structure-Reactivity Relationships & Treatment Strategies"

Dr. Maryam Shakiba
Assistant Professor, Civil & Environmental Engineering, Virginia Tech
"Physics-Based Modeling of Heterogeneous & Additively Manufactured Materials: Combining Finite Elements & Data-Driven Approaches"

2020-2021 SEMINAR SPEAKERS

Dr. Jiannan (Nick) Chen
Assistant Professor, Civil, Environmental, & Construction Engineering, University of Central Florida

"Application of Machine Learning to Predict the Performance of Barrier System in Solid Waste Management"

FRANK PARKER LECTURE SERIES: Dr. Rafael Bras

K. Harrison Brown Family Chair & Professor, Civil & Enviornmental Engineering and Earth & Atmospheric Sciences
Georgia Institute of Technology
"Saving Venice: Triumphs & Failures"

Dr. Renee Obringer

Postdoctoral Research Fellow, National Socio-Environmental Synthesis Center (SESYNC)
"A Socio-Environmental Systems Approach for Water Demand Management: A Tale of Two Cities"

Emerging Scholars In Engineering Lecture: Dr. Gabriel Perez

Postdoctoral Scholar, Civil & Environmental Engineering, Vanderbilt University
"Resonance in Hydrologic Systems: Detecting Critical Conditions Than Can Exacerbate Extreme Floods During Current & Future Climate"

Dr. Olga Fink

Chair, Intelligent Maintenance Systems, ETC Zurich
"Fusing Physics-Based & Deep Learning Algorithms For Fault Diagnostics & Prognostics"

Dr. Janette Meyer

Adjunct Professor, Civil & Environmental Engineering, Vanderbilt University and Owner, Jackhomeyer Engineering
Vibration-Based Structural Health Monitoring Methods"

Ms. Erin Hakfen Schiel

Executive Director, Mobility & Transportation, Vanderbilt University
"Move VU"

Dr. Robert Bachus

Senior Principal Engineer, Geosyntec Consultants

"Civil Engineering Resiliency in Response to Extreme Events - East Coast Lessons"

Emerging Scholars in Engineering Lecture: Dr. Paromita Nath

Postdoctoral Scholar, Civil & Environmental Engineering, Vanderbilt University

"Additive Manufacturing: Uncertainty Quantification & Optimization"

Dr. Peter Vikesland

Nick Pillaman Professor of Civil & Environmental Engineering, Civil & Environmental Engineering, Virginia Tech

"Nanotechnology Enabled Environmental Sensing"

Special Seminar: Dr. Jon Hathaway

Associate Professor, Civil & Environmental Engineering, University of Tennessee Knoxville

"Reimaging Urban Watershed Management: Smart City Approaches & The Ultimate Prize"

Dr. Andrew Luhmann

Assistant Professor, Geology, Wheaton College

"Pulling Out the Polygraph & Turning Up the Heat: Investigating Karst Aquifers Using Geophysics & Water Temperature"

2019-2020 SEMINAR SPEAKERS

Dr. Chris Hendrickson

Professor of Engineering Emeritus, Hamerschlag University & Director of Traffic 21 Institute, Carnegie Mellon University

"Past & Future of the U.S. Interstate Highway System"

Dr. Andres Gonzalez

Assitant Professor, Industrial & Systems Engineering, University of Oklahoma

"Optimization & Control Techniques for Resilient Systems of Interdependent Infrastructure Networks"

Doug Scheffler
USCG Economist, Retired
"Big Data - Applications in Freight Transportation"

Special Seminar - Dr. Jamie Padgett
Associate Professor, Civil Engineering, Rice University
"Multi-Hazard Risk Assessment in Coastal Industrial Regions"

Dr. Eric Pierce
Distinguished Scientist, Environmental Sciences Division, Earth Sciences Group Leader, Subsurface Science Program Leader, Oak Ridge National Laboratory
"Influence of Watershed Structure & Function on Mercury Biogeochemical Transformations in a Freshwater Low-Order Stream"

FRANK PARKER LECTURE SERIES - Dr. David Pittman
Director of U.S. Army Engineer Research & Development Center, Director of Research & Development, Chief Scientist, U.S. Army Corps of Engineers
"Environmental Engineering & the U.S. Army Engineer Research & Development Center"

Dr. Leonard Petnga
Assitant Professor of Systems Engineering, Industrial & Systems Engineering & Engineering Management, The University of Alabama, Huntsville
"Semantically-Enabled Model-Based Systems Engineering of Safety-Critical Network of Systems"

CEE / EES Joint Seminar - Dr. Laura Crossey
2019 Birdsall-Dreiss Distinguished Lecturer, Geological Society of America, Professor, Earth & Planetary Sciences, University of New Mexico
"Hydrochemistry & Geoscience Education at Grand Canyon & Beyond: Who Knew Groundwater Hydrology Could Be So Complicated"

Dr. Scott Brooks

Distinguished R&D Scientist, Environmental Sciences Division, Oak Ridge National Laboratory

"A Top-Down Perspective Towards Understanding Controls on Watershed Function"

Dr. Heileen Hsu-Kim

Yoh Family Professor, Civil & Environmental Engineering, Duke University

"Managing Aquatic Mercury Pollution: Modern Approaches for a Legacy Contaminant"

Dr. Ilia Papakonstantinou

PhD, Transportation Planning & Engineering, New York University

"Highway Infrastructure Protection Planning Against Sea Level Rise Under Various Decision Maker Scenarios"

Dr. Ty Ferre

Distinguished Professor, Hydrology & Atmospheric Sciences, University of Arizona

"A Discussion of the Application of Bayes Law to Water Resources Investigations for Three Audiences - Stakeholders, Entry-Level Hydrogeologists, & Seasoned Hydrogeologic Consultants"

Dr. Y. C. Ethan Yang

Assistant Professor, Civil & Environmental Engineering, Lehigh University

"Evaluating Few Nexus in the Coupled Natural-Human System with Agent-Based Modeling"

2018-2019 SEMINAR SPEAKERS

Dr. Nii Attoh-Okine

Professor, Civil & Environmental Engineering, Interim Academic Director, University of Delaware Cyber Security Initiative

“Quantum Blockchain & Society 5.0 - Cyber Resilience of the Future”

FRANK PARKER LECTURE SERIES - Dr. Rae Zimmerman

Research Professor & Professor Emerita, New York University, Wagner Graduate

School of Public Service
“Confronting Disruptions of Interconnected Infrastructure Systems”

Dr. Roseanna Neupauer
Professor & President's Teaching Scholar, Civil, Environmental, & Architectural Engineering, University of Colorado, Boulder
“Enhanced Spreading & Mixing to Improve in Situ Remediation of Contaminated Groundwater”

Michael Skipper
Executive Director, Greater Nashville Regional Council
“Middle Tennessee: The Future of Mobility in a Changing Region”

AAEES Special Seminar - Dr. Boualem Hadjerioua
Lead, Water Power Technology, Oak Ridge National Laboratory, Adjunct Professor, Civil & Environmental Engineering, Vanderbilt University
“Next Century Integrated Water Cycle Scientific Grand Challenge”

CEE / EES Joint Seminar - Dr. Brian Bledsoe
Athletic Association Distinguished Professor in Resilient Infrastructure, University of Georgia
“Navigating the Three C's of Flood Hazard Management: Compounding Effect, Co-Benefits, & Communication”

Special Seminar - Dr. Yanyu Chen
Assistant Professor, Mechanical Engineering, University of Louisville
“Architected Materials in Extreme Environments”

Stephen Nolet
Senior Director, Innovation & Technology, Principal Engineer, TPI Composites
“Advances & Topics in the Design & Fabrication of Utility-Scale Wind Turbine Blades”

Dr. Andreas Tselebidis

Director, Sustainable Concrete Technology & Solutions, BASF Corporation

“Building A Sustainable Future - Engineering the Impossible”

CEE / ME Joint Seminar - Dr. Paul Veers

Chief Engineer, Wind Energy Science Group Manager, NREL's National Wind Technology Center

“Wind Energy Modeling & Simulation: The Amazing Interrelationships of Physics & Engineering in Wind Plant Design”

Dr. Durelle Scott

Associate Professor, Biological Systems Engineering, Virginia Tech

“From Headwater Streams to Large, Riverine Wetlands: A Look Into the Science & Engineering Solutions in Managing Our Freshwater Resources”

Special Seminar - Dr. Candace Brakewood

Assistant Professor, Civil & Environmental Engineering, University of Tennessee, Knoxville

“Big Data Approaches to Understanding the Intersection of Bikesharing & Public Transit”

Dr. Seth Guikema

Associate Professor, Industrial & Operations Engineering, Civil & Environmental Engineering, University of Michigan

“Community Resilience & Risk Under Repeated Hazards”

Special Seminar - Lars Ole Grottenberg

Research Fellow, Societal Safety & Risk Management, University of Stavanger, Norway

“Towards an Active Flu Management Based on Real-Time Spatiotemporal Information from Societal Systems”

Dr. Chi Sun Poon

Chair & Professor, Sustainable Construction Materials, Associate Head of Research, Civil & Environmental Engineering, The Hong Kong Polytechnic University

“Enhancement of Properties of Recycled Aggregate Concrete by Accelerated CO2 Curing"

Clay Payne
Geosciences Engineer, Muclear Waste Disposal Research & Analysis
“Chemical-Mechanical Effects on Subcritical Fracture Initiation & Propagation in Fused Quartz”

2017-2018 SEMINAR SPEAKERS

Sue Cange
Visiting Scholar, Civil & Environmental Engienering, Vanderbilt University
“The Department of Energy's Environmental Management Program - The Largest, Most Complex Nuclear Cleanup Program in the World”

Dr. Allan Bower
Professor of Engineering, Brown University
“Microstructure-based Computational Design of Advanced High-strength Steels”

FRANK PARKER LECTURE SERIES - Dr. Saleemul Huq
Director, International Centre for Climate Change & Development and Senior Fellow, International Institute for Environment & Development
“An International Perspective on Response to Climate Change Policy & Action”

Dr. David Demeritt
Professor of Geography, Kings College, London
“Informing Adaptation in England... Or Why Scientific Ignorance and Uncertainty are the Least of our Problems in Confronting Climate Change”

Dr. John Foster
Associate Professor, Petroleum and Geosystems Engineering, Aerospace Engineering & Engineering Mechanics, University of Texas at Austin
“Coupling Fem & Meshfree Peridynamics for the Simulation of Hydraulic Fracturing”

Data Science Colloquium - Danielle Beringer

Senior Manager, Information Systems, Data Management & Analytics, Nissan North America

“Big Data & Analytics - Driving Change at Nissan”

Dr. Samit Roy

William D. Jordan Professor, Aerospace Engineering & Mechanics, Director of Advanced Materials Processing Lab, The University of Alabama

“Length Scale Issues in Multifunctional Nanocomposites: Theory & Applications”

FRANK PARKER LECTURE SERIES - Dr. Amr Elnashai

Vice Chancellor & Vice President for Research & Technology Transfer, University of Houston, Texas

“Coupled Fire & Earthquake Loading Effects on Buildings”

Erik Cole

Chief Resiliency Officer, Metropolitan Nashville

“The Urban Resilience Approach in Nashville”

Vicki Arroyo & Jessica Grannis

Executive Director of Georgetown Climate Center, Assistant Dean of Centers & Institutes, Professor of the Practice,

Adaption Program Manager of Georgetown Climate Center

“Climate Change Update: People, Policies, & Place”

Dr. Alan Needleman

Professor, University Distinguished Professor, Tees Distinguished Research Professor, Dept. of Materials Science & Engineering, Texas A&M University

“Roughness, Toughness and the Possibility of Crack Path Engineering”

Dr. Junho Song

Proefessor, Civil & Environmental Engineering, Seoul National University

“Particle Filter Based Monitoring & Prediction of Spatiotemporal Deterioration Using Successive Measurements of Structural Responses”

Dr. Wayne Truter

Senior Lecturer & Researcher, Plant & Soil Sciences, Faculty of Natural & Agricultural Sciences, University of Pretoria, South Africa

“Reclaiming the Agricultural Potential of Degraded Soils in South Africa with Siliceous Fly Ash Soil Ameliorants”

2016-2017 SEMINAR SPEAKERS

Dr. Sudarsan Rachuri

Federal Program Officer & Technology Manager, Advanced Manufacturing Office, Office of Energy Efficiency & Renewable Energy (EERE), Department of Energy

“Smart & Advanced Manufacturing Innovation in DOE”

Chris Wiernicki

Chairman, President & CEO of ABS, Chairman of ABS Group of Companies Inc.

“How Disruptive Technologies are Shaping the Marine & Offshore Industries”

Dr. David McDowell

Regents' Professor & Carter N. Paden, Jr. Distinguished Chair in Metals Processing, Executive Director of Institute for Materials, Woodruff School of Mechanical Engineering, School of Materials Science & Engineering, Georgia Institute of Technology

“Challenges & Opportunities for Simulated-Assisted Design of Metallic Materials”

Michael Nye

Net Zero Program Manager, National Exposure Research Laboratory, EPA Region 8 - Denver, US Environmental Protection Agency

“Information as Power: Smarter Meters, Information Flows, & Water & Energy Use Practices”

Jim Murphy (co-sponsored by Vanderbilt Initiative for Intelligent Resilient Infrastructure Systems (IRIS)

Project Director, Civil/Water Resource Engineering, DC Metro Area, AECOM
“A Practical Exercise - A Levee is Much More than an Engineering Solution”

FRANK PARKER LECTURE SERIES - Dr. Surendra P. Shah
Walter P. Murphy Professor of Civil Engineering (Emeritus), Center for Advanced Cement Based Materials, Northwestern University
“Nanotechnology, High Performance Concrete & Sustainability”

Dr. Jimmy T. Bell
CEO, Bell Consultants, Retired from Oak Ridge National Laboratory
“Nuclear Proliferation in a Terrorist-Threatened World”

Dr. Timothy Truster
Assistant Professor, Civil & Environmental Engineering, University of Tennessee, Knoxville
“A Stabilized Finite Element Framework for Modeling Slip & Fracture at Interfaces”

Dr. John E. Dolbow
Professor of Civil & Environmental Engineering, Mechanical Engineering & Materials Science, & Mathematics, Duke University
“Models & Simulations of the Surfactant-Driven Fracture of Particulate Rafts”

Dr. Micha Klein
Emeritus, Department of Geography, University of Haifa, Israel
“Sea Level Rise - True or False?”

Dr. Vincent Tidwell
Distinguished Member of the Technical Staff, Sandia National Laboratories
“Challenges & Opportunities at the Evolving Nexus of Climate, Energy, Water & Waste”

Dr. S. Gopalakrishnan
Professor & Chairman, Department of Aerospace Engineering, Indian Institute of Science, Bangalore

“Guided Wave Based Structural Health Monitoring of Built-Up Structures Under Certain Environment”

Dr. Jonathan Gilligan
Associate Professor of Earth & Environmental Sciences, Associate Professor of Civil & Environmental Engineering, Vanderbilt University
“Climate Change Science Myth Busters”

Sayanti Mukhopadhyay
PhD Student, Purdue University, Postdoc Candidate
“Advanced Data Analytics to Understand Climate & Severe Weather Risks in the Electricity Sector”

Dr. Gabriela Bar-Nes
Head of Applied Chemistry Laboratory, Nuclear Research Center, Negev, Israel
“Formulation of Zeolites in Metakaolin-Based Geopolymers & Their Potential Application for CS Immobilization”

2015-2016 SEMINAR SPEAKERS

Dr. Christophe Darnault
Assistant Professor, Department of Environmental Engineering & Earth Sciences, Clemson University, Associate Editor, Journal of Hydrology
“Behavior of Nano- & Bio-particles in Porous Media: Characterization of Transport Processes & Development of Monitoring Methods/Tools”

Dr. David Jassby
Assistant Professor, Chemical & Environmental Engineering, University of California - Riverside
“New Directions in Water Treatment Engineering: Coupling Physical, Chemical and Biological Reactions to Address Emerging Challenges”

Dr. Suvranu De
J Erik Jonsson ‘22 Distinguished Professor of Engineering, Head, Department of

Mechanical, Aerospace & Nuclear Engineering, Director, Center for Modeling, Simulation & Imaging in Medicine, Rensselaer Polytechnic Institute
"Virtual Surgery"

Brock Smethills
Chief Operating Officer, Sterling Ranch Development Company
“Sterling Ranch - The Vision of a Model Sustainable Community”

Dr. Tzahi Cath
Associate Professor of Civil & Environmental Engineering, Director, Advanced Water Technology Center (AQWATEC),
Colorado School of Mines
“Osmotically Driven Membrane Processes: The Science, Engineering, and Applications, and the Path to Adoption”

Dr. Eric Giannini
Assistant Professor of Civil, Construction & Environmental Engineering, University of Alabama
“Nondestructive Evaluation of ASR-affected Concrete Structures – Challenges for Laboratory Research”

FRANK PARKER LECTURE SERIES - Dr. Katherine Banks
Vice Chancellor for Engineering, Dean, Dwight Look College of Engineering, Professor of Civil Engineering, Texas A&M University
“Growth with Excellence: The 25 by 25 Initiative”

Dr. Shihong Lin
Assistant Professor of Civil & Environmental Engineering, Assistant Professor of Chemical & Biomolecular Engineering
Vanderbilt University
“Practical Tips for Effective Paper Writing”

Dr. Jianguo Liu
Professor and Vice Dean, School of Environment, Tsinghua University, DeputyDirector,

Key Laboratory for Solid Waste Management & Environment Safety, Ministry of Education of China
“Overview & Perspective of MSW Mmanagement in China”

Dr. Brandon Runnels
Assistant Professor of Mechanical & Aerospace Engineering, University of Colorado, Colorado Springs
“A general & Predictive Model of Anisotropic Grain Boundary Energy & Morphology for Polycrystal-Level Simulations”

Dr. Wing Kam Liu
Walter P. Murphy Professor of Mechanical & Civil & Environmental Engineering, Northwestern University
“Linking Process, Structure, Property, and Performance for Metal-Based Additive Manufacturing: Computational Approaches with Experimental Support”

Dr. Ezra Cates
Assistant Professor of Environmental Engineering & Earth Sciences, Clemson University
“Boldly Going Where No UV Has Gone Before: Producing UVC Inside Membrane mMdules via X-Ray Radioluminescence for Biofouling Prevention”

Dr. Ranganathan Parthasarathy
Postdoctoral Researcher, TSU Nanomaterials Research Lab, Tennessee State University
“Atomistic to Continuum Homogenization Method and Bonding Super-Hard Ceramics to Polymers”

Major General Ed Jackson
US Army Corps of Engineers
"The US Army Corps of Engineers: Serving our Nation’s Past, Present & Future Water Resource Needs

CEE Graduate Students - 3 Minute Thesis Presentations

Cole Brubaker, "In Situ Material State Monitoring using CdSe Quantum Dots"

Kofi Christie, "Natural Organic Matter (NOM) Fouling of Porous Carbon Electrodes"

Erin DeCarlo, "Model Errors in Coupled Problems"

Thushara Gunda, "Risky Business: Using Games to Understand Farmer Decision-Making"

Chenzhao Li, "Probabilistic Aircraft Digital Twin"

ValaRae Partee, "The Poisoning of a City: Preventing the Next Flint"

Chelsea Peters, "Multi-scale Water Dynamics in Bangladesh"

Yonathan Reches, "Nano-particles in Concrete for Nuclear Storage"

Amy Shaw, "Hydropower and Water Quality: A Juggling Act"

Zhangxin Wang, "Composite Membrane for Anti-oil-fouling Membrane Distillation"

2014-2015 SEMINAR SPEAKERS

FRANK PARKER LECTURE SERIES - Dean Linda Abriola, Ph.D.

Dean, School of Engineering, Professor, Department of Civil & Environmental Engineering, Professor, Department of Chemical & Biological Engineering, Tufts University

"Nanomaterial Transport in the Subsurface: Emerging Pollutants and Novel Characterization Tools"

Dr. Michael V. Vandenbergh

David Daniels Allen Distinguished Chair of Law, Co-director, Energy, Environment & Land Use Program, Director, Climate Change Research Network, Vanderbilt University

“Taking Innovation Seriously: Imagining New Structures from Governance to Engineering”

Dr. Setphen Clay

Senior Aerospace Engineer

“Overview of Air Force Research on Composite Structures”

Dr. B. John Garrick

Vice Chairman, National Academy of Sciences (NAS) Study

"Lessons Learned from the Fukushima Daiichi Nuclear Power Plant Accident"

Dr. Pinjing He

Head, Institute of Waste Treatment & Reclamation, College of Environmental Science & Engineering, Tongji University

Head, Research & Training Center on Rural Waste Management, Ministry of Housing & Urban-Rural Development of P.R. China

“Municipal Solid Waste Management in China: Status, Challenges & Opportunities”

Dr. Philippe H. Geubelle

Bliss Professor & Head, Aerospace Engineering Department, University of Illinois at Urbana-Champaign

“Microvascular Composites for High Temperature Applications”

2013-2014 SEMINAR SPEAKERS

Dr. Douglas Adams

Chair & Professor of Civil and Environmental Engineering, Professor of Mechanical Engineering, Director, Laboratory for Systems Integrity & Reliability, Vanderbilt University

"The Laws Of Mechanics: How Did They Do It?"

Dr. Randall Allemang

Professor, Mechanical & Materials Engineering, Director, Structural Dynamics Research Lab, College of Engineering & Applied Science, University of Cincinnati

"A Principal Component Analysis (PCA) Decomposition Based Validation Metric for Use with Full Field Measurement Situations"

Tim Ault

Ph.D. Candidate, Nuclear & Environmental Engineering, Civil & Environmental

Engineering, Vanderbilt University
"Thorium Resource Recovery Opportunities & Their Environmental Impacts"

Dr. Leonard Bond
Director, Center for Nondestructive Evaluation, Professor, Aerospace Engineering, Iowa State University
"From Nondestructive Examination to Prognostics"

Sean Buck
J.E. Dunn Construction Company, Brentwood, Tennessee
"What to Do When You Have an Engineering Degree & Realize You May Not Want to Do Design...."

Wei Chen, Ph.D.
Professor in Engineering Design, Mechanical Engineering, Northwestern University
"Computational Design of Emerging Engineered Materials System"

Phillip J. Collins, P.E.
ECS Central, PLLC, Engineering Consulting Services, Franklin, Tennessee
"Practicing in the Geosciences Industry"

Dr. Konstantin Kovler
Head, Building Materials & Technology, National Building Research Institute Faculty of Civil & Environmental Engineering, Technion – Israel Institute of Technology
"Crack Resistance & Durability-Related Properties of Internally Cured High-Performance Concrete"

Dr. Jack McNamara
Associate Professor, Mechanical & Aerospace Engineering, The Ohio State University
"Fluid-Structural Interactions in Ultra High Speed Flows"

Dr. Richard Wiebe
Postdoctoral Research Engineer, Universal Technology Corporation, Structural Sciences Center, Air Force Research Laboratory, AFRL/RQ, Wright-Patterson AFB, OH

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"Chaos, Fractals, & More: Nonlinear Dynamics of Structural Engineering Systems"

2012-2013 SEMINAR SPEAKERS - A SELECTION

Dr. George Hornberger & Dr. Mark Abkowitz

Professors of Civil & Environmental Engineering, Vanderbilt University

"Climate Change & Infrastructure Adaptation"

Dr. Çağlar Oskay

Associate Professor, Civil & Environmental Engineering, Vanderbilt University

"Failure Modeling of Heterogeneous Structures Subjected to Extreme Loading & Environments"

Dr. P. K. Basu

Professor, Civil & Environmental Engineering, Vanderbilt University

"Blast & Impact Effects on Concrete Components"

Dr. Sankaran Mahadevan

Professor, Civil & Environmental Engineering, Professor, Mechanical Engineering, Vanderbilt University

"Uncertainty, Risk, & Decision-Making for Engineering Systems"

Dr. Sanjiv Gokhale

Professor, Civil Engineering, Vanderbilt University

"Utilizing GIS to Prioritize Water & Sewer Renewal"

Dr. Ravindra Duddu

Assistant Professor, Civil & Environmental Engineering, Vanderbilt University

"Nonlocal Continuum Damage Mechanics for Creep Fracture in Glaciers & Ice Sheets"

Dr. Jianmin Qu

Professor, Civil & Environmental Engineering, Professor, Mechanical Engineering, Northwestern University

"Thermo-Electro-Chemo-Mechanics of Solids & Their Applications to Fuel Cells & Batteries"

Dr. Somnath Ghosh

Michael J. Callas Professor, Civil Engineering & Mechanical Engineering, Johns Hopkins University

"Computational Mechanics Applications in Integrated Computational Materials Science & Engineering (ICMSE)"

Dr. Douglas Adams

Profesor, Purdue University

"Structural Dynamic Imaging: To See What is Unseen in Materials & Machines"

Dr. Florence Sanchez

Associate Professor, Civil & Environmental Engineering, Vanderbilt University

"Nanotechnology & the Concrete World: Small Science for a Big Future"

Dr. Eugene LeBoeuf

Professor, Civil & Environmental Engineering, Vanderbilt University

"Hydropower Optimization in an Environmentally Sustainable Context"

Dr. Janey Camp

Research Assistant Professor, Vanderbilt University

"Assessing Current & Future Flood Impacts to Communities & Infrastructure Systems"

Dr. James Dobbins

"Marine Transportation Systems Analysis"

Dr. James Clarke

Professor of the Practice, Civil & Environmental Engineering, Vanderbilt University

"Low Level Nuclear Waste Management Challenges"

Dr. Charles Powers

Professor of Environmental Engineering, Vanderbilt University

"Facing Ethical Dilemas in Engineering Practice"

Dr. Curtis Byers

Professor of the Practice, Civil & Environmental Engineering, Vanderbilt University

"The Pleasures of Structural Consulting"

Lisa Edwards

Senior Program Manager, Nuclear Chemistry, Radiation Management & Low Level Waste Group, Nuclear Sector, Electric Power Research Institute (EPRI)

"Low Level Radioactive Waste: Regulatory Changes & Analysis"

Lindsay Jenkins

Ph.D. Candidate, Graduate Program in Construction Management, Civil & Environmental Engineering, Vanderbilt University

"Utilizing GIS to Prioritize Water & Sewer Renewal"

Dr. Beth Conklin

Chair, Department of Anthropology, Vanderbilt University

"Constricting the 'Lungs of the World': Water, Energy & Climate Change in the Brazilian Amazon"

2011-2012 SEMINAR SPEAKERS

Susan Thorneloe

Environmental Engineer, United States Environmental Protection Agency, Air Pollution Prevention & Control Division

"LEAF Test Methods & the Development of EPA Policy"

Sohini Sarkar

Postdoctoral Researcher, Civil & Environmental Engineering, Vanderbilt University

"Probabilistic Durability Analysis of Cementitious Materials Under External Sulfate Attack"

Dr. Michael Beer

Professor, Centre for Engineering Sustainability, School of Engineering, University of

Liverpool
"Generalized Models for Uncertainty & Imprecision in Engineering"

Dr. Tom Iseley, P.E.
Professor, Director, Construction Engineering Management Technology Program, Purdue School of Engineering & Technology, Indianapolis, Indiana
"Underground Infrastructure Management"

Dr. Steve Krahn
Professor of the Practice, Civil & Environmental Engineering, Vanderbilt University
"Pushing the Boundary of Technology: Lessons Learned From the Loss of the U.S. Submarine Thresher"

Dr. Kevin G. Brown
Senior Research Scientist, Civil & Environmental Engineering, Vanderbilt University
"Waste Forms & Treatment Options for High-Level Waste (HLW) Immobilization"

Dr. Charles W. Powers
Professor of Environmental Engineering, Civil & Environmental Engineering, Vanderbilt University
"Ethical Dilemmas in the Work of Environmental Engineers"

Dr. James Dobbins
Research Associate Professor, Civil & Environmental Engineering, Vanderbilt University
"Transportation Analysis & Visualization Using Geographic Information Systems (GIS)"

2010-2011 SEMINAR SPEAKERS - A SELECTION

Bob Sneed
Chief, Water Management Section, Nashville District, U.S. Army Corps of Engineers
"A Perspective of the Army Corps of Engineers on the Record Nashville Flood of May 2010"

Dr. Claudia C. Marin-Artieda
Assistant Professor, Civil Engineering, Howard University
"Basic Concepts on Seismic Protective Systems"

Dr. Jonathan Gilligan
Associate Director for Research, Vanderbilt Climate Change Research Network, Associate Professor, Earth & Environmental Science, Vanderbilt University
"Assessing Global Climate Change: Science, Politics, & Credibility"

Dr. Kumares C. Sinha
Edgar B. & Hedwig M. Olson Distinguished Professor of Civil Engineering, Purdue University
"Transportation Engineering & Emerging Technologies"

Dr. Michael Stabin
Associate Professor, Radiology & Radiological Sciences, Vanderbilt University
"Critique of Classical Radiation Dosimetry Quantities & Radiobiology"

Dr. Mark Cohen
Vice President for Research, Senior Fellow, Resources for the Future
"Optimal Monitoring & Enforcement to Prevent Oil Spills"

Karen Scrivener, Ph.D.
Professor & Head, Laboratory of Construction Materials, Ecole Polytechnique Federale de Lausanne, Switzerland
"Cementing the Future of Concrete through the Application of Science"

Dr. Steve Krahn
Professor of the Practice, Civil & Environmental Engineering, Vanderbilt University
"Boiling Water Reactors & the Fukushima Power Station Crisis"

Dr. Gaurav Sant
Assistant Professor, Civil & Environmental Engineering, UCLA
"Shrinkage Reducing Admixtures: Smart Materials for increasing the Service Life of

Concrete Structures."

Paul Sloan
Deputy Commissioner, TN Department of Environmental & Conservation
"Achieving Environmental Quality in Tennessee: Reflections of a Retiring Director"

Dr. Benjamin Mohr
Associate Professor, Civil & Environmental Engineering, Tennessee Technological University
"Curing Concrete From the Inside Out: Advances in Internal Curing of Concrete"

Dr. Robert S. Reimers, Q.E.P.
Professor, Environmental Health Sciences, Tulane University
"Usage of Wastewater& Biosolids Reuse for Central Wetlands Assimilation"

Dr. Surendra P. Shah
Walter P. Murphy Professor of Civil Engineering, Civil & Environmental Engineering, Director, Center for Advanced Cement-Based Materials, Northwestern University
"Nanoscale Modifications of Cementitious Materials"

Dr. Anthony Ingraffea
Dwight C. Baum Professor of Engineering, Civil & Environmental Engineering, Cornell University
"Simulation of Fatigue Cracking Processes in a High-Strength Aluminum Alloy"

Dr. Zia Razzaq
Professor, Civil & Environmental Engineering, Old Dominion University
"Influence of 9/11 Events on Structural Engineering Education & Research"

Dr. Ted V. Galambos
Emeritus Professor of Structural Engineering, Civil Engineering, University of Minnesota
"The Safety of Bridges"

Dr. David Kosson

Cornelius Vanderbilt Professor of Engineering, Civil & Environmental Engineering, Vanderbilt University

"Development & Implementation of the Leaching Environmental Assessment Framework (LEAF)"

Dr. Hans van der Sloot

Hans van der Sloot Consultancy

"Developments in Europe on Environmental Regulations for Soil, Waste & Construction Products"

Ashok Bhatnagar

Senior Vice President, Nuclear Operations, Tennessee Valley Authority

"TVA: Nuclear Energy Generation"

Mike Sangid

University of Illinois at Urbana-Champaign

"Fatigue Modeling of U720: A Multi-Scale Approach in Understanding Grain Boundary Effects on Crack Initiation"

2009-2010 SEMINAR SPEAKERS

Dr. Frank L. Parker

Distinguished Professor, Civil & Environmental Engineering, Vanderbilt University

“Unresolvable Nuclear Waste “Problem””

Rose Rodriguez

Associate / Principal, SDL Structural Engineers

“Careers, Jobs, Licensing”

Tom Wilbanks

Group leader, Global Change & Dev. Countries Programs, Oak Ridge National Laboratory

“Climate Change and Sustainability”

Greg Stein

Vice President of Design & Construction, Hospital Corporation of America

“As Owner and Client, Our Needs Are Simple”

Wenjin Meng

Mechanical Engineering, Louisiana State University

“Metal-Based Microscale Structures & Devices” From Fabrication to Applications”

Paul Murray

Technology & Integration Manager, AREVA

“Closing the Fuel Cycle by Recycling Used Nuclear Fuel”

Dr. Peter Jaffe

Professor, Civil & Environmental Engineering, Princeton University

“Microbial & Geochemical Responses to Biostimulation of U(VI) Reduction in Soils & U(IV) Post-Stimulation Stability”

Yvette T. Collazo

Deputy Secretary, Technology Innovation & Development, Office of Environmental Management, U.S. Department of Energy

“Deactivation & Decommissioning Technology Challenges & Career Opportunities”

Brooke Traynham

Civil & Environmental Engineering, Vanderbilt University

“Long-Term Performance Assessment for Engineered Containment Systems: The Role of Ecological Processes”

Kim Willis

President, Columbia Construction

“Role of Women in Construction”

Dr. Zdenek Bazant

Professor, McCormick School of Engineering, Northwestern University

“Scaling of Probability Distribution of Quasibrittle Strength & Lifetime Based On Atomistic Fracture Mechanics”

Dr. Surya Pathak

Assistant Professor, Operations & Managemnet School of Business, University of Washington-Bothel

“Optimization, Control, & Evolution in Competitive Networks”

Dr. Aniruddha Gokhale

Assistant Professor, Electrical Engineering & Computer Science, Vanderbilt University

“Cyber Physical Systems Perspective for Real-Time & Reliable Information Dissemination in Intelligent Transportation Systems”

Ajit K. Roy

Senior Materials Research Engineer, Air Force Research Laboratory

“How Critical is Materials Interfface in Thermal Transport”

Dr. Robert Stammer

Associate Professor, Civil & Environmental Engineering, Vanderbilt University

“CSI: Transportation Engineering Style”

Dr. John Boice

Professor, Vanderbilt School of Medicine, Scientific Director, International Epidemiology Institute

“Radiological Epidemiology”

Robert Waters

Distinguished Member of the Technical Staff, Sandia National Laboratory

“Quantifying Severe Credible Environments for Truck Cargo”

Dr. Ken Pence

Associate Professor, Electrical Engineering & Computer Science, Vanderbilt University

“Security Issues at Strategic Nuclear Sites”

Mike Ryan

Chair, ACRS Subcommittee, Radiation Protection & Nuclear Materials

“New Reactor Designs: Basic Information & Additional Resources”

Erin Criste

Advisor, Steel Solutions Center, American Institute of Steel Construction

“Innovations in Steel”

Dr. Dayakar Penumadu

Dept. Head & Professor, Civil & Environmental Engineering, JIAM Chair of Excellence, University of Tennessee, Knoxville

“Imaging with Neutrons for Materials Science & Engineering”

Dr. Kevin Brown

Senior Research Scientist, Civil & Environmental Engineering, Vanderbilt University

“Analysis of Dose Commitments Resulting from Atmospheric Transport & Deposition from Nuclear Risk Sites in the Russian Far East”

Dr. Karel Matous

Associate Professor, Aerospace & Mechanical Engineering, University of Notre Dame

“Modeling of Heterogeneous Solid Propellants”

Charles Farrar

Director, Engineering Institute, Los Alamos National Lab

“Structural Health Monitoring Techniques”

Dr. Francisco Armero

Professor, Civil & Environmental Engineering, University of California – Berkley

“Finite Elements with Embedded Discontinues for the Modeling of Failure in Solids”

Edward D. Wetzel

Executive Vice President, Water & Waste Resources, R.W. Beck

“Privatization of Municipal Water Systems in the Face of Economic Crisis”

Dr. George Pinder

Professor, Civil & Environmental Engineering, University of Vermont

“Research Center for Groundwater Remediation Design an Experimental Investigation of the Impact of Tidal Fluctuation on Groundwater Contaminant Discharge”

Dr. Bernard Goldstein

Professor Emeritus, University of Pittsburgh

“The Global Environment: Health & Policy”