

NSF RCN-SEES: Predictive Modeling Network for Sustainable Human-Building Ecosystems (SHBE) Agenda (subject to change)



Theme: International Workshop on Putting Sustainability into Convergence: Connecting Data, People, and Systems

Date: January 28-29, 2018

Venue: Kent Ridge Guild House, National University of Singapore (NUS), Singapore

Time	Monday January 28, 2018
7:30 – 8:00am	Registration and Continental Breakfast
8:00 - 8:20am	Welcome Remarks by <i>Chien-fei Chen, University of Tennessee</i> <i>Yong Tao, Nova Southeastern University (PI for this group)</i>
8:20 – 8:50am	Keynote 1: Understanding Human Requirements in the Built Environment: An Interdisciplinary Challenge - Prof. Ardeshir Mahdavi
8:50 – 10:10am	<p>Session 1: Human Building Interaction, Design and Urban Planning Chair: Larissa Larsen</p> <ul style="list-style-type: none"> • Da Li, Carol Menassa & Vineet Kamat – Improving Human Health and Wellness in Buildings through Contactless Thermography Based Comfort Interpretation • Cui Li – Study the Intelligent Control of Indoor Environment and Energy Management for Open Office Building Based on the UWB • Amy Kim, Lindsay McCunn, Shuoqi (Stanley) Wang, & Aleksejs Prozuments – Psychoacoustical Research Pertaining to the Healthy Workspaces • Tianzhen Hong – Urban Systems: Connecting Buildings, Humans and Microclimate • Clayton Miller & Tapeesh Sood- Innovative Occupant Engagement: The SpaceMatch Comfort Recommendation Engine and the Learning Trail Crowdsourced Feedback Platform • Clinton Andrews – Rethinking Evidence-Based Building Design
10:10 - 10:20am	Opening Remarks by Khee-Poh Lam from NUS
10:20 – 10:40am	Break
10:40 - Noon	<p>Session 2: Critical Infrastructure and Social and Physical Factors Chair: Hiba Baroud</p> <ul style="list-style-type: none"> • Beta Paramita - Strengthen Building Morphology for Urban Hazard Mitigation, a Manifestation of Urban Health and Well-Being in a High-dense of Kampong • Siddharth Suryanarayanan, Neil Grigg, Suren Chen, Zinta Byrne, Katherine Browne, & Michael Bell - Achieving Interdependent Critical Infrastructures and Community Resilience through Convergence of People, Predictions, Processes, and Performance: An Overview • Larissa Larsen, Brian Stone, Santiago Grijalva, Sharon Harlan, David Hondula & Marie O’Neill - Black Out Vulnerability: Investigating Social and Physical Factors that Influence Restoration Time of the Electrical Grid in Atlanta, Detroit, and Phoenix • Joshua Fu & John D - Impacts of Extreme Weather Events on Future Human health and Energy infrastructure • Hiba Baroud - Predictive Analytics for Achieving a Sustainable Resilience of Infrastructure and Communities.

	<ul style="list-style-type: none"> • Andrea Mammoli, Chien-fei Chen & Joana Abreu. A Bottom-up Technology-Behavior Model for Real-time Demand Response and Load Shedding from Aggregated Residential Energy Services.
12:00 - 1:00pm	Lunch and Steering Committee Meeting
1:00 - 1:30pm	Keynote 2: Enhancing Outage Management with Smart Meter Data - Prof. Chen-Ching Liu
1:30 – 2:50pm	Session 3: Modeling, Simulation for Building Infrastructure and Sustainability Chair: Siddharth Suryanarayanan <ul style="list-style-type: none"> • Balasubramanian S. & P. Balachandra - Modelling Electricity Demand with Representative Load Curves: A Simulation-based approach • Saptarshi Bhattacharya, Koushik Kar, & Joe Chow - Intelligent HVAC-load control in Smart Grids for Ensuring Economic Operation and Consumer Fairness • Dimitris Papanikolaou - Data Driven System Dynamics Methods for Scenario Analysis in Mobility-on-Demand Systems • Qianqian Zhao, Huibin Dua & Hongyang Zou - An Agent-Based Diffusion Modeling and Simulation of New Energy Vehicles • Robert Zupko - Agent Based Life Cycle Sustainability Assessment to Assess Regional Potential for Second Generation Biofuel Development • Mark Roulea- ForestSim: Agent-Based Simulation for Forest Management Policy Experimentation and Bioenergy Sustainability Assessment
2:50 - 3:10pm	Break
3:10 – 4:50pm	Session 4: Artificial Intelligence and Big Data for Building Performance and Landscape Chair: Clinton Andrews <ul style="list-style-type: none"> • Dan Li & See-Kiong Ng - Deep learning for Building Fault Detection and Diagnostics • Prashant Anand - Estimation of Energy Saving for Cooling Loads using Occupancy-based VAV Control Analysis of An Institutional Building • Xueying Jiang - Is China's Transportation Infrastructure Balanced in Spatial Distribution?" • Yan Chen, Kate Sherren, Mike Smit & Mona Holmlund – Using Machine Learning to Understand Landscape Perceptions via Social Media • Junjing Yang, Punit Varshesh Gandhi, & Siew Eang Lee - Occupancy Based Energy Performance Evaluation and Control through Data Driven Analytics • Yimin Zhu - Collaborative Virtual Experiments to Support Human-Centered Building Design
4:50 – 5:30pm	Wrap-up Day 1 (Committee members moderate with research themes/questions based on day's presentations).
6:00 – 8:00 pm	Dinner at Café on The Ridge

Time	Tuesday January 29, 2018
7:40 – 8:00am	Registration and Continental Breakfast
8:00 - 8:30am	Keynote 3: Emissions, Inequality, and Human Wellbeing - Prof. Andrew Jorgenson
8:30 - 10:00am	Session 5: Energy Justice, Collection Action, Renewables and Education Chair: Lazardous Adua <ul style="list-style-type: none"> • Sergey Gavrillets - Collective Action Problem and Its Solutions • Lazardous Adua - Context Matters! States, Households and Residential Energy Consumption

	<ul style="list-style-type: none"> • Jing Shuai, Chuanmin Shuai, Liping Ding & Jing Wang - Interaction between Ecosystem Services and Rural Poverty Reduction: Evidence from China • David Krantz, Maxx Patterson, Jessica Otten & Tara Nietzold - Community Partnership for Disaster-Response Solar PV • Huibin Du, Xinyu Jia & Houyang Zou - Effectiveness of the Net-Metering Policy in China's Distributed Photovoltaic System • Nirav S. Patel - Coupling Energy Education and the United Nations Sustainable Developmental Goals (UN-SDGs).
10:00 – 10:20am	Break
10:20– 12:00pm	<p>Section 6: Behavior, Economic and Policy Implications for Energy Use Chair: Dina Azhgaliyeva</p> <ul style="list-style-type: none"> • Stephen Bird - Data, Motivation, Feedback, Engagement, and Individuation: Next Step Challenges in Smart Housing Implementation • Da Li, Xiaojing Xu, Chien-fei Chen & Carol C. Menassa - An Integrated Framework of Energy-Saving Behaviors in the Workplace: The Role of Motivation, Opportunity, and Ability Factors • Weiyu Ji - The Adoption and Willingness to Pay for Smart Home Energy Technology by Urban Residents • Dina Azhgaliyeva - Green Fintech: New Opportunities for Governmental Support and Regulation • Huibin Dua, Qun Lia, Xi Liua & BinBin Peng - Costs and Potentials of Reducing CO2 Emissions in China's Transport Sector: Findings from an Energy System Analysis • Akhil Joseph & P. Balachandra - An Energy Internet Architecture Based on Private Blockchain
12:00 -1:00pm	Lunch
1:00 – 2:00pm	Wrap-up Day 2 (Committee members moderate with research themes/questions based on previous presentations).
2:00 – 3:00pm	Break out section or steering committee member meeting
3:00 - 4:30 pm	School of Design and Environment Tour (Net Zero Energy Building)

Workshop Committee:

Chair: Chien-fei Chen, University of Tennessee, Knoxville
Co- Chair: Khee Poh Lam, National University of Singapore
Daniel Hii Jun Chung: National University of Singapore
Yong X. Tao: Nova Southeastern University
Carol Menassa: University of Michigan
Yimin Zhu: Louisiana State University

The Venue Address:

Kent Ridge Guild House
9 Kent Ridge Drive
Singapore 119241
<https://goo.gl/maps/EsyMxNAPrr72>