

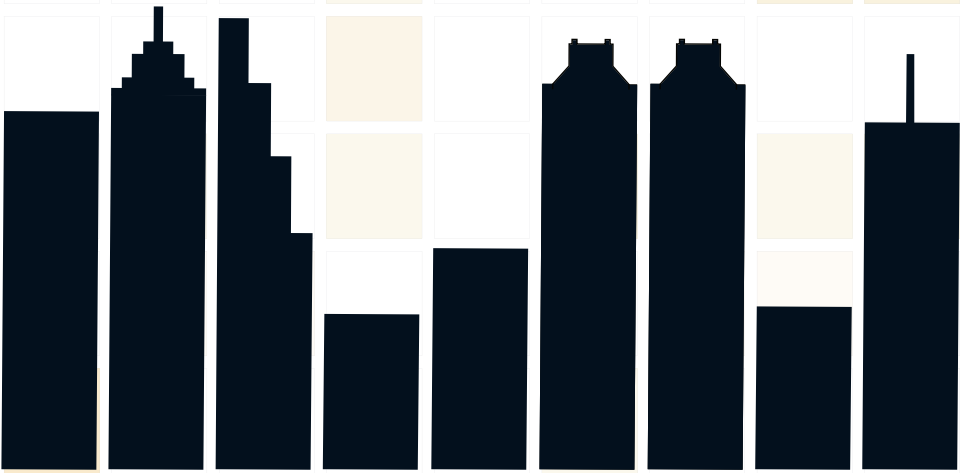
WELCOME TO THE 10 YEAR CELEBRATION OF THE

**SYMPOSIUM ON SIMULATION FOR
ARCHITECTURE AND URBAN DESIGN**

SimAUD 2019

ATLANTA | USA | APRIL 07-09

**SCHOOL OF ARCHITECTURE | COLLEGE OF DESIGN
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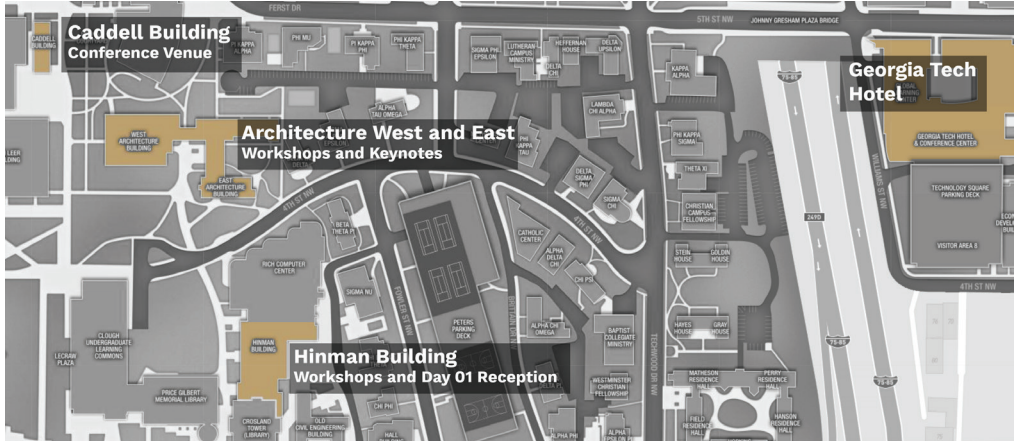
Silver



UNIVERSITY OF
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College of Design



Bronze



DAY 01

Pre-Conference Activities

- 08:00 - 08:30 Coffee and Registration - Caddell Building
- 08:30 - 11:30 Pre-conference Workshops
- 11:30 - 12:30 Lunch - Caddell Building Flex Space
- 12:30 - 13:00 SimAUD 2019 Welcome & Announcements by Siobhan Rockcastle and Tarek Rakha

Experiential Climates

Session Chair: Jason Brown

- 13:00 - 13:15 **Sun and Wind: Integrated Environmental Performance Analysis for Building and Pedestrian Comfort**
(Francesco De Luca)
- 13:15 - 13:30 **A Parametric Workflow to Conceive Facades as Indoor and Outdoor Climate Givers**
(Emanuele Naboni, Eric Danzo, and Luca Ofria)
- 13:30 - 13:45 **Streets, Parks & Plazas: Analyzing Daylight in the Public Realm** (Elizabeth de Regt and Timothy Deak)
- 13:45 - 14:05 Questions and Panel Discussion with the Authors
- 14:05 - 14:35 Coffee Break

Retrofitting Analysis

Session Chair: Ellen Dunham-Jones

- 14:35 - 14:50 **Unleashing the Diversity of Conceptual Building Renovation Design** (Aliakbar Kamari, Carl Peter, Leslie Schultz, and Poul Henning Kirkegaard)
- 14:50 - 15:05 **Application of Surrogate Modeling to Multi-Objective Optimization for Residential Retrofit Design**
(Arfa N. Aijazi and Leon R. Glicksman)
- 15:05 - 15:15 **Aerial Thermography as a Tool to Inform Building Envelope Simulation Models** (Norhan Bayomi, Shreshth Nagpal, Tarek Rakha, Christoph Reinhart and John E. Fernandez)
- 15:15 - 15:35 Questions and Panel Discussion with the Authors
- 15:35 - 16:05 Coffee Break

Data in Mixed Realities

Session Chair: Keith Kaseman

- 16:05 - 16:20 **Towards Assembly Information Modeling (AIM)**
(Ayoub Lharchi, Mette Ramsgaard Thomsen and Martin Tamke)
- 16:20 - 16:35 **Subjective Impressions of a Space Influencing Brightness Satisfaction: an Experimental Study in Virtual Reality**
(Azadeh Omidfar Sawyer and Kynthia Chamilothoni)
- 16:35 - 16:45 **Immersive Representation of Urban Data**
(Amber Bartosh and Rongzhu Gu)
- 16:45 - 17:05 Questions and Panel Discussion with the Authors
- 17:05 - 17:45 Coffee Break and Transfer to the College of Design Auditorium

SimAUD Public Keynote I

- 17:45 - 18:45 **Cyber-Physical Systems and Open Data Platforms**
(Dennis Sheldon)

Evening Reception at Hinman Research Building, 18:45 - 20:00

DAY 02

Registration

07:30 - 08:00 Coffee and Registration - Caddell Building

Modeling Urban Energies

Session Chair: John E. Taylor

08:00 - 08:15 A Data-Driven Framework for Urban Building Operational Energy Use Modeling (Narjes Abbasabadi)

08:15 - 08:30 An Integrated Urban Planning and Simulation Method to Enforce Spatial Resilience Towards Flooding Hazards (Julius Morschek, Reinhard König, and Sven Schneider)

08:30 - 08:45 A Method for Integrating an UBEEM with GIS for Spatiotemporal Visualization and Analysis (Bess Krietemeyer and Rawad El Kontar)

08:45 - 09:00 A Technique for Developing High-Resolution Residential Occupancy Schedules for Urban Energy Models (Diba Malekpour Koupaei, Farzad Hashemi, Vinciane Tabard-Fortecoëf and Ulrike Passe)

09:00 - 09:20 Questions and Panel Discussion with the Authors

09:20 - 09:50 Coffee Break

Welcome Remarks

09:50 - 10:05 Steven P. French - Georgia Tech College of Design Dean

10:05 - 10:20 Scott Marble - Georgia Tech School of Architecture Chair

10:20 - 10:50 Godfried Augenbroe - Georgia Tech High Performance Building

10:50 - 11:15 Coffee Break

Designing Urban Futures

Session Chair: Perry Yang

11:15 - 11:30 Environmental Data and Land Use: Integration of Site-Specific Ecology and Urban Design (Claudio Campanile and Shih Hsin Wu)

11:30 - 11:45 How to Generate a Thousand Master Plans: A Framework for Computational Urban Design (Luc Wilson, Jason Danforth, Carlos Cerezo Davila, and Dee Harvey)

11:45 - 12:00 CityFiction – Scenarios for Densification (Henrik Malm and Petra Jennings)

12:00 - 12:10 Exploring Urban Walkability Models and Pedestrian Movement Trends in a Vancouver Neighbourhood (Nicholas Martino, Cynthia Girling, and Edja Trigueiro)

12:10 - 12:30 Questions and Panel Discussion with the Authors

12:30 - 13:30 Lunch - Caddell Building Flex Space

Mediums of Indoor Comfort

Session Chair: Xinyi Song

- 13:30 - 13:45 **A Simulation-Based Design Analysis for the Assessment of Indoor Comfort Under the Effect of Solar Radiation**
(Andrea Zani, Henry David Richardson, Alberto Tono, Stefano Schiavon, and Edward Arens)
- 13:45 - 13:55 **Black Globe Free Convection Measurement Error Potentials**
(Eric Teitelbaum, Jovan Pantelic, Adam Rysanek, Kian Wee Chen, and Forrest Meggers)
- 13:55 - 14:10 **Assessing the Performance of UFAD System in an Office Building Located In Various Climate Zones**
(Roshanak Ashrafi, Mona Azarbayjani, Robert Cox, Benjamin Futrell, Joseph Glass, Amir Zarrabi, and Armin Amirazar)
- 14:10 - 14:20 **Evaluating the Influence of Three Simplifications on Natural Ventilation Rate Simulation** (Yuchen Shi and Xiaofeng Li)
- 14:20 - 14:40 **Questions and Panel Discussion with the Authors**
- 14:40 - 15:15 **Coffee Break (Group picture in front of Caddell Building)**

Simulating People

Session Chair: Sonit Bafna

- 15:15 - 15:30 **Adaptive Occupancy Scheduling: Exploiting Microclimate Variations in Buildings** (Max Marschall and Jane Burry)
- 15:30 - 15:45 **Toward a Multi-Level and Multi-Paradigm Platform for Building Occupant Simulation** (Davide Schaumann, Seonghyeon Moon, Muhammad Usman, Rhys Goldstein, Simon Breslav, Azam Khan, Petros Faloutsos, and Mubbasir Kapadia)
- 15:45 - 16:00 **Multi-Constrained Authoring of Occupant Behavior Narratives in Architectural Design**
(Xun Zhang, Davide Schaumann, Brandon Haworth, Petros Faloutsos, and Mubbasir Kapadia)
- 16:00 - 16:10 **Including Occupant Behavior in Building Simulation: Comparison of a Deterministic vs. a Stochastic Approach** (Max Marschall, Farhang Tahmasebi and Jane Burry)
- 16:10 - 16:30 **Questions and Panel Discussion with the Authors**
- 16:30 - 16:45 **Break and Transfer to the College of Design Auditorium**

SimAUD Public Keynote II

- 16:45 - 17:45 **The Future of Thermal Comfort in a Warming Climate (Stefano Schiavon)**

Panel Discussion with Invited Panelists

Session Chair: Michael Gamble

- 18:10 - 18:50 **Modeling Praxis: the Case of the Living Building Challenge at Georgia Tech** (Todd Mowinski, Alissa Kingsley, and Joshua Brooks)

Dinner and Awards

A bus leaves from Georgia Tech at 18:50. Arrival back [New Realm Brewery] to Georgia Tech Hotel at 23:00.

DAY 03

Registration

07:30 - 08:00 Coffee and Registration - Caddell Building

Robots that Make

Session Chair: Russell Gentry

08:00 - 08:15 **Rotoform - Realization of Hollow Construction Elements Through Roto-Forming with Hyper-Elastic Membrane Formwork** (Oliver Tessmann and Samim Mehdizadeh)

08:15 - 08:30 **Environmentally Informed Robotic-Aided Fabrication** (Carmen Cristiana Matiz, Heather “Brick” McMenomy, and Elif Erdine)

08:30 - 08:45 **Curved-Crease Folding and Robotic Incremental Sheet Forming in Design and Fabrication** (Elif Erdine, Antiopi Koronaki, Alican Sungur, Angel Fernando, Lara Moreira, Alvaro Lopez Rodriguez, George Jeronimidis, and Michael Weinstock)

08:45 - 09:05 Questions and Panel Discussion with the Authors

09:05 - 09:35 Coffee Break

Performative Structures

Session Chair: Vernelle Noel

09:35 - 09:50 **Structural Performance of Semi-Regular Topological Interlocking Assemblies** (Michael Weizmann, Oded Amir, and Yasha Jacob Grobman)

09:50 - 10:05 **Data-Driven Material System of Graded Concrete Structures** (Elisabeth Riederer and Anuradha Suryavanshi)

10:05 - 10:20 **Modularizing Tensegrity Systems: An Approach to Controllable Independent Modules** (Arian Saeedfar and Paniz Farrokhsiar)

10:20 - 10:30 **A Framework for Cost-Optimal, Zero-Energy, Lightweight Construction** (Mohamed Amer and Shady Attia)

10:30 - 10:50 Questions and Panel Discussion with the Authors

10:50 - 11:00 Break - Transfer to the College of Design Auditorium

SimAUD Public Keynote III

11:00 - 12:00 **Wait, What?**
(Billie Faircloth)

12:00 - 13:15 Lunch - Caddell Building Flex Space

Design Decision Models

Session Chair: Pardis Pishdad-Bozorgi

- 13:15 - 13:30 **An Automated Framework Creating Parametric BIM from GIS Data to Support Design Decisions**
(Chengde Wu, Saied Zarrinmehr, Mohammad Rahmani Asl, and Mark J. Clayton)
- 13:30 - 13:45 **Digital Energy Performance Signature Extensible Markup Language (DEPSxml)** (Justin McCarty and Adam Rysanek)
- 13:45 - 14:00 **From Optimization to Performance-Informed Design**
(Thomas Wortmann and Thomas Schroepfer)
- 14:00 - 14:15 **Linear and Classification Learner Models for Building Energy Predictions and Predicting Saving Estimations**
(Kevin Eaton, Nabil Nassif, Pyrian Rai, and Alexander Rodrigues)
- 14:15 - 14:35 Questions and Panel Discussion with the Authors
- 14:35 - 15:00 Coffee Break

Geometric Explorations

Session Chair: Athanassios Economou

- 15:00 - 15:15 **From Drawing Shapes to Scripting Shapes: Architectural Theory Mediated by Shape Machine**
(Heather Ligler and Athanassios Economou)
- 15:15 - 15:30 **Interpreting Non-flat Surfaces for Walkability Analysis**
(Mathew Schwartz and Subhajit Das)
- 15:30 - 15:45 **Generating Acoustic Diffuser Arrays with Shape Grammars**
(Jonathan Dessi-Olive and Timothy Hsu)
- 15:45 - 16:00 **A Unified Framework for Optimizing the Performance of a Kinetic Façade**
(Ok-Kyun Im, Kyoung-Hee Kim, Armin Amirazar, and Churlzu Lim)
- 16:00 - 16:20 Questions and Panel Discussion with the Authors
- 16:20 - 16:50 Coffee and Light Snack Break

Panel Discussion with Invited Panelists

- 16:50 - 17:30 SimAUD Sponsor Engagement and Panel
- 17:30 - 17:45 Break - Transfer to the College of Design Auditorium

SimAUD Public Keynote IV

- 17:45 - 18:45 **Shape Matters**
(Dana Cupkova)

SimAUD Closing Remarks

- 18:45 - 19:00 Closing Remarks & SimAUD 2020 Announcements

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