

October 28 – 30, 2019

<https://sustainability.gatech.edu/showcase>

Kendeda Building for Innovative Sustainable Design
422 Ferst Drive NW, Atlanta GA 30313

CREATING THE NEXT

Sponsored by:

Brook Byers Institute for Sustainable Systems
Office of the Executive Vice President for Research
Kendeda Building for Innovative Sustainable Design
Sustainable Design & Manufacturing Lab
Ray C. Anderson Center for Sustainable Business

Draft⁶ Schedule

Three full-days, subdivided into **six half-day** sessions – attend only what matters to you:

Monday Morning October 28 9:00AM

People: Health, Wealth, Wellbeing, Equity, Ethics, Socioeconomics, Behavior, Culture, Education, Metrics

- Japan Summer Program in Sustainable Development (Brian Woodall)
- Sustainability in Germany - GT Students and the UN SDGs (Britta Kallin)
- Service learning in Metz, France: accelerating language acquisition and cross-cultural competency while making a difference. (Tatiana Kozhanova)
- Community Organizations and the Teaching of Sustainability in Study Abroad Programs in France (Chris Ippolito)
- Serve-Learn-Sustain in Spain: Social, Economic, and Environmental Approaches (Kelly Comfort)
- Overview of The Global Media Festival: Sustainability across Languages and Cultures (Juan Carlos Rodriguez)
- Chinese Cultural events on Sustainability (Jin Liu)
- The Global Media Fest and Sustainability Studies in Atlanta (Stephanie Boulard)
- German Global Media Fest Events and Course Module (Jan Uelzmann)
- Ashes to Honey: Sustainability in Japan (Amanda Weiss)
- Re-Shape: A Platform to Cultivate Care in the Practice of Data Science (Ben Shapiro and Amanda Meng)
- Incentives for Workplace Safety (Ravi Subramanian)

Monday 10:30AM – Noon Live Remote Viewing of the Inauguration of President Angel Cabrera

Monday Noon – 1:00PM Lunch Social, Poster Viewing, and Exploration of the Kendeda “Living Building”

Monday Afternoon October 28 1:00PM

Keynote 1:00-1:30PM: Intergenerational Change (John Lanier, Executive Director, Ray C. Anderson Foundation)

Organizations and Institutions: Governance, Decision Making, Planning, Regulation, Investment, Markets

- Atlanta Food Bank visit in Japanese class (Aya McDaniel)
- Beyond Service Learning: Learning service through community partnerships and social innovation (Dori Pap)
- Broader Impacts: Sustainability Education in K-12 (Lizanne DeStefano)
- Multi-dimensional Poverty and Environmental Factors (Shatakshee Dhongde)
- Teaching and Implementing Just Sustainabilities in a Music and Culture Mecca (Joycelyn Wilson)
- Service Learning and Sustainable Writing Pedagogy (Darcy Mullen)
- Using Societal Priorities for Multicriteria Decision Making (Emily Grubert)
- Energy, sustainability, finance and politics. (Kate Pride Brown)
- Equilibrium Sorting and Moral Hazard in Residential Energy Contracts (Dylan Brewer)
- Improving Water Access in Mumbai Slums through Citizen Empowerment (Anjali Thomas)
- The use of public private partnerships to facilitate sustainable and smart city development (Yunping Liang and Baabak Ashuri)
- Optimal Service Portfolio for Non-Profit Organizations Serving Distressed Individuals (Karthik Ramachandran)
- Energy Transitions in History (Germán Vergara)
- Integrating Science, Engineering and Economics for Sustainable Policies (Emanuele Massetti - Emanuele Di Lorenzo)
- Reversible fuel cells for energy storage and conversion (Meilin Liu)
- Negative CO2 Emissions Technologies Based on Direct Air Capture of CO2 (Christopher Jones)
- Improved sustainability and resilience using decentralized water and energy infrastructure (John Crittenden)

Keynote 4:30-5:00PM: Reflections on Sustainability at Georgia Tech (G. Wayne Clough, President Emeritus of Georgia Tech and former Secretary of the Smithsonian Institution)

Tuesday Morning October 29 9:00AM

Natural Systems: Atmosphere, Oceans, Water, Biodiversity, Climate, Weather, Natural Resources

- Phosphorus removal, recovery, and recycling (Jie Xu)
- Air Quality Research at Georgia Tech (Nga Lee (Sally) Ng, Rodney Weber, Greg Huey, Jennifer Kaiser, and Ted Russell)
- Biologically inspired systems design for sustainability (Marc Weissburg)
- Breaking the Bucket List: Sustainable Heritage Tourism (Danielle Willkens)
- An historical perspective to biodiversity conservation strategies (Jenny McGuire)
- How honey bees collect pollen (Marguerite Matherne)
- Pollinator Conservation, Research, and Education on Campus: The Urban Honey Bee Project and Bee City USA (Jennifer Leavey)
- Environmental Economics: Valuing our Natural Capital (Laura Taylor)
- Environmental Externalities and Cost of Capital (Sudheer Chava)
- Workplace Implications of Just-in-Time Scheduling (Qiuping Yu)
- The Economic Impact of Right-to-Work Laws (Andras Danis)
- Creative Destruction? Assessing the Impact of E-Commerce on Employees at Brick-and-Mortar Retailers (Manpreet Singh)
- Supply Chain Transparency as a Mechanism to Promote Social & Environmental Responsibility (Basak Kalkanci)
- Product Recalls and Corporate Social Responsibility (Manpreet Hora)
- Sustainable Cities Minor at Georgia Tech (Jairo Garcia)
- Extreme Atlanta: Educating Students in Sustainability, Global Climate Change and Urban Spaces (Zachary Handlos)
- Impacts of Climate Change on Long-Term Reliability of Structures (Iris Tien)
- An Outlook on Energy and Materials Loops in the Future (Hailong Chen)
- Materials for Batteries (Matt McDowell)
- Artificial Intelligence for Sustainability (Ashok Goel)
- Library Resources for Sustainability Research (Isabel Altamirano)

Tuesday Noon – 1PM Lunch Social, Poster Viewing, and Exploration of the Kendeda “Living Building”

Tuesday Afternoon October 29 1:00PM

Built Systems: Cities, Transportation, Power & Energy, Water, Data & Communications, Food & Agriculture, Buildings, Landscape

- Energy and water budgeting tool for Kendeda building operators (Jung-Ho Lewe)
- Regenerative building simulator: Kendeda building fast forward to 2050 (Jung-Ho Lewe)
- Smart Commons: GT Shenzhen smart campus research (Perry Yang)
- How do we build a sustainable transportation infrastructure? (Kari Watkins)
- Emerging tech, new mobility services, and their impacts on urban mobility and the environment (Giovanni Circella)
- Biomass as a Sustainable Energy Solution (Valerie Thomas)
- Transportation Infrastructure Sustainability through Bridge Weigh-In-Motion (Yang Wang)
- Transportation Sustainability in a world of Connected and Automated Vehicles (Angshuman Guin)
- Behavioral incentives for electric vehicle charging (Omar I. Asensio)
- Retrofitting Suburbia (Ellen Dunham-Jones)
- Sustainability Follows Integration (Pardis Pishdad-Bozorgi)
- Global Sustainable Sanitation: Reinventing the Toilet (Shannon Yee)
- Chemical ecology interventions for algal biofuel production (Julia Kubanek)
- Organic and Hybrid Materials for Power Production. (Seth Marder)
- Organic and Hybrid Thermoelectrics for Power Generation and Personal Cooling (Shannon Yee)
- Urban-Aware Materials for Passive Heat Management (Natalie Stingelin (represented by Carlos Silva))
- Green Chemistry in research: gauging process development and developing new metrics (Andy Bommarius)
- Nanocellulosic aerogels, films and composites (Yulin Deng)
- Serve-Learn-Sustain Affiliated Faculty Share Their Experiences as Teachers, Researchers, and Program-Builders (Ruth Yow, Allen Hyde, Dori Pap, Jen Singh, and Frank Wickstead)
- Assessing the Sales Impact of Firms' CSR Initiatives (Adi Pattabhiramaiah)
- Designing Effective Extended Producer Responsibility Programs (Beril Toktay)

Wednesday Morning October 30 9:00AM

Technologies: Manufacturing, Construction, Design, Engineering, Computing, Operations, Logistics

- Occupant-Centered Workplace Hybrid Ventilation in the US: Now and the Future (Xinyi Song)
- Building Technology for the Sustainability of the Built Environment (Tarek Rakha)
- Grid-scale energy storage as an enabling technology (Richard Simmons)
- Status Opportunity and Next Generation Silicon Photovoltaics Research At Georgia Tech (Ajeet Rohatgi)
- Re-Wind: Re-Use of De-Commissioned Wind Turbine Blades (Russell Gentry, Tristan Al-Haddad and Larry Bank)
- Recycling Carbon: CO₂ to Fuels (Matthew Realff)
- Largest-Ever USDA Grant To Grow Vegetables with Wastewater Nutrients (Yongsheng Chen)
- Opportunities for renewable driven food, energy and water systems (Marta Hatzell)
- Aerating bed for black soldier fly larvae (Olga Shishkov)
- Greener oxidation technologies for safer and more sustainable water environments (Ching-Hua Huang)
- Biomass to biofuel, an enzyme approach to renewable and clean bioenergy (Hongnan (Conan) Cao)
- Phenol Production from Lignin (Carsten Sievers)
- A Model-based Approach for a Mobility and Traffic Incident Forecasting Environment (Michael Balchanos)
- Connected Vehicles to the Rescue: How Connected Vehicle Technology based Signal Preemption can improve Emergency Vehicle Response Times (Angshuman Guin)
- Spatial-Temporal Event Modeling for Complex Systems (Xiaoming Huo)
- A Look at the New Green Deal: Results from an Analysis using GT's National Energy Modeling System (Marilyn Brown)
- Internet technology and education for kids in poor areas (Haizheng Li)
- Biologically Inspired Design (Jeannette Yen, Marc Weissburg, Michael Helms)
- Advancing the UN SDGs and Education for Sustainable Development at Georgia Tech and across the Greater Atlanta Region (Sebnem Ozkan, David Eady, Alice Favero, John Taylor)

Wednesday Noon – 1PM Lunch Social, Poster Viewing, and Exploration of the Kendeda “Living Building”

Wednesday Afternoon October 30 1:00PM

Future Vision

- Sustainability-Themed Socio-technical project-based learning in the Engineering classroom (Raghu Pucha)
- Master of / Certificate in Sustainable Energy and Environmental Management programs (Dan Matisoff)
- Minor in Leadership Studies aka The Global Engineering Leadership Minor (GELM) (Adjo Amekudzi-Kennedy)
- Creating a healthy workplace for college students (Eunhwa Yang)
- Uncertain Projections of Sea Level Rise and the Implications for Coastal Decision-Making (Alex Robel)
- Preliminary Climate Vulnerability Assessment of Downtown Atlanta (Jairo Garcia)
- "Smart" solutions for climate change resilience (Kim Cobb)
- Autonomous vehicles and their impact on cities and urban living (Subhro Guhathakurta)
- Sustainable engineering systems – From cars to ecosystems (Bert Bras)
- From Landfill to Road: Transform high-value Industrial Waste into Low CO₂ Emission Vehicles (Kyriaki Kalaitzidou)
- Beyond Carbon Considerations in Georgia Drawdown (Michael Oxman)
- Energy Affordability in Atlanta (Beril Toktay)
- 21st Century Housing Prototypes (Michael Gamble)
- Smart Materials for a Sustainable Future (Bernard Kippelen)
- Fast Forward to 2050: Carbon neutrality path planning tool for GT Campus (Scott Duncan)
- Faculty Panel on the Future of Sustainability Research and Education at Georgia Tech (TBD)

Keynote 4:30-5:00PM: Big Sustainability (John Brock, Former Chairman and Chief Executive Officer of Coca-Cola Enterprises Inc.)

Posters Available October 28 - October 30

- Locally Enhanced Electric Field Treatment (LEEFT) for Next-Generation Water Disinfection (Xing Xie)
- Energy sharing boundaries for buildings and vehicles (Daniel Castro and Soowon Chang)
- Indoor air quality in the Kendeda Building (Jennifer Kaiser)
- Low Carbon Combustion Research at Georgia Tech (Tim Lieuwen)

- Freshman engineering students see value in sustainability-themed project-based learning (Raghu Pucha, Sunni Newton and Meltem Alemdar)
- Sustainability Programming and Curricular Resources in K-12 Education (Sabrina Grossman)
- Culture and Equity in Education (Diley Hernandez)
- Georgia Tech's New Certificate and Master of Sustainable Energy and Environmental Management (Marilyn Brown)
- Professional Learning and Outreach in Sustainability for K12 Educators (Mike Ryan)
- Library Research Tools for Built Systems and Sustainability (Lisha Li)
- Engaging Students in The Kendeda Building through Serve-Learn-Sustain (Jennifer Hirsch)
- Sustainable Undergraduate Research Fellows (William Abdallah, Joey Buehler, Leo Chen, Anielle Duritza, Kian Halim, Kyte Harvey, Gigi Pavur, Jeniveve Vaia, Michael Chang)

- Getting Personal with Data to Cultivate Care in Computing Education (Ben Shapiro)
- VERA: A Virtual Ecological Research Assistant (Ashok Goel)

- Gender, Frontline Health, and the Promises and Perils of AI (Neha Kumar)
- Global Meat: Social and Environmental Consequences of the Expanding Meat Industry (Bill Winders)
- Energy Security and Older Americans; the Impact of Environmental Water Stress (Sharon Murphy)
- Breaking the Bucket List: Sustainable Heritage Tourism (Danielle Willkens)

- Modeling ocean biogeochemical cycling (Taka Ito)
- Water Sustainability: Characterizing the Processes Transforming Metal and Organic Contaminants in Aquatic Systems (Martial Taillefert)
- Sea Level Rise and Savannah: Phenomena Based Curriculum for Middle School Science Science Classes (Jayma Koval)

- Assessment of Electric Vehicle Energy Consumption in Regional Transportation Networks (Randall Guensler)
- Personal Vehicle Ownership and Operating Cost Calculator (Daejin Kim)
- A Sensitivity Analysis of Electric Vehicle Energy Efficiency, Driving Range, and Operating Cost Using Regional-level Household Daily Travel Patterns (Randall Guensler)
- A sustainable pavement preservation technology: micro-milling and thin overlay (Yi-Chang (James) Tsai/Zhaohua Wang)
- A Framework to Assess Fleet-wide Transit Energy Consumption with Alternative Fuels (Randall Guensler)

- Sustainability and Technology: Working for the Corporacion del Proyecto ENLACE del Cano Martin Pena in Puerto Rico (Catherine Ross and Alberto Fuentes)
- 21st-Century Housing Options in Eight Different Countries (Michael Gamble)
- Patagonia National Parks- Exploring Facets of Sustainable Design (Amanda Lai)
- Disaster Lending: Fair Prices, but Unfair Access (Daniel Weagley)
- Atlanta Global Studies Center (AGSC) Initiatives in Education for Sustainable Development (ESD) and Atlanta Sustainability Studies (Sebnem Ozkan)
- Japan Summer Program in Sustainable Development (Brian Woodall)

- Atlanta Downtown Climate Vulnerability Assessment (Jairo Garcia)
- Georgia Drawdown: Identifying the most promising solutions for achieving carbon neutrality in Georgia (Marilyn Brown)
- Smart Sea Level Sensors in Chatham County, GA (Kim Cobb)