

SPONSORS

GOLD

strategy&



SILVER















BRONZE





PECAN STREET













About UT Energy Week 2016

UT Energy Week 2016 is hosted by The University of Texas at Austin Energy Institute, the student-led Longhorn Energy Club, and the KBH Center for Energy, Law & Business, in collaboration with several on- and off-campus partners and support from the many academic units and research centers engaged in energy-related research across the UT Austin campus. The conference provides a platform for experts in academia, industry, government, and the non-profit world to provide their insights on vital energy issues facing society today. UT Energy Week also highlights the work of students involved in important energy research and showcases the deep expertise among scientists and researchers at UT Austin, the premier energy research university in the world.

Welcome	3
Schedule	4
Program Overview	10
Student Research Competition	14
Energy Technology Competition	18
Maps	20

ENERGY WEEK WIFI ACCESS

- 1 Connect to the attwifi network
- 2 Open your web browser
- 3 Click on "Use A Coupon"
- 4 Enter WPR1-7AiJ-48



Longhorn Energy Club seeks to leverage the world-class academic, co-curricular, and extra-curricular energy opportunities at UT for the betterment of all members of the UT community. In particular, the aim of this organization shall be to build community and collaboration between students at UT, support energy-related activities and events, and to aid members in pursuit of energy careers.

Darcia Datshkovsky Sáenz	President
Susan Sharp	
Nicholas Harris	Energy Week Co-Chair
Raj Roy	Energy Week Co-Chair
Andrew Reimers	Speakers Committee Chair
Pooja Sinha	Energy Week Logistics Chair
Kayla Fenton	VP of Corporate Relations
Margaret Cook	VP of Corporate Relations
Brooke Holleman	VP of Marketing
Nalbeat Sonny Kwan	VP of Entreprenuership
Rahul Verma	VP of Entreprenuership
Samantha Reuter	VP of Research
Chris Podbregar	VP of Professional Development
Adam Smith	VP of Professional Development
Kyle Gabb	VP of Finance
Hobie Temple	VP of Marketing
Matthew Deanner	VP of K12 Outreach

Welcome to UT Energy Week 2016

Welcome to the second *UT Energy Week*, co-hosted by The University of Texas at Austin Energy Institute, the Longhorn Energy Club, and the KBH Center for Energy, Law & Business. Conference collaborators include the University's Cockrell School of Engineering, Jackson School of Geosciences, and the Office of Technology Commercialization, along with CleanTX and Texas Exes, with additional support from schools, colleges, and centers engaged in energy research across the UT Austin campus.

UT Energy Week is designed to showcase the interdisciplinary collaboration and sharing of expertise we believe is essential in identifying and solving complex energy problems facing our world. Sponsored by academic, industry, governmental, and not-for-profit partners, the conference aims to further the public discourse of vital energy issues through a candid discussion among experts offering varying perspectives and views.

Our goal for the conference is three-fold: to create a platform for experts who can provide insights on important energy issues and emerging trends; to highlight the work of UT Austin students involved in cutting-edge energy research; and to demonstrate the depth and breadth of knowledge among scientists and other researchers at UT Austin, the premier energy research university in the world.

Through a series of panel discussions and keynote addresses, you'll hear spirited discussions concerning new energy technologies, the interplay of markets and government, and the trade-offs associated with energy development and environmental protection. Experts will tackle an array of topical energy issues, including de-carbonization of the electric grid; the prospects for large-scale energy storage; the science and regulatory response to hydraulic fracturing; powering cities of the future; Mexico's entry into competitive energy markets; and more.

Be sure to check out the student energy research poster competition and startup challenge, which offers cash and prizes for innovative approaches to solving vexing energy challenges.

UT Energy Week also features several affiliate events, including the Center for Electromechanics' annual workshop on Electrochemistry; the Institute for Computational Sciences' Integrated Computing Workshop on Computation & Energy; and the Environmental Science Institute's K-12 Teachers Program and Middle School Science Fair.

View the complete schedule for *UT Energy Week* in this program, or check out the online schedule of events at http://energyweek.utexas.edu.

Thank you for attending *UT Energy Week 2016* and for giving us the opportunity to share with you some of the vital energy research taking place at UT Austin. Sincerely,

Dr. Thomas F. Edgar Director, Energy Institute Darcia Datshkovsky Sáenz President, Longhorn Energy Club

Tuesday, February 16

Mexico's Electric Power Sector Reform: The Role of Natural Gas and Renewables

11:00 – 11:30 Opening Remarks

Jorge Piñón, Director, Latin America and Caribbean Energy
Program, UT Austin

Thomas F. Edgar, Director of UT Austin Energy Institute
UT Austin President Gregory L. Fenves

11:30 – 12:30 Keynote Speaker: **Christopher Smith**, Assistant Secretary for Fossil Energy, U.S. Department of Energy

12:30 - 1:30 Lunch

10:00-11:00 Registration

1:30 – 2:45 Panel: Electric Power Reform
 Norma de la Salud Álvarez Girard, Directora General en la
 Unidad de Sistemas Eléctricos, Comisión Reguladora de Energía CRE.

Peter Nance, Principal, ICF International
Calvin Crowder, President, Electric Transmission Texas, LLC
Erika Benson, President, Benson International Group, LLC
Max Yzaguirre, CEO, The Yzaguirre Group, L.L.C. (Moderator)

2:45 – 3:15 Break

3:15-4:30 Panel: The Role of Natural Gas

David Madero, General Director, Centro Nacional de Control del Gas Natural CENAGAS.

James Fowler, Editor, ICIS Mexico Energy Report

Carlos Garcia, Lewis Energy Group

Bob Gibb, Associate Director, Navigant

Barry Smitherman, Partner, Energy Regulation, Vinson & Elkins (Moderator)

4:30 – 5:00 Program Summary: Challenges and Opportunities

Melinda Taylor, Executive Director, KBH Center for Energy,

Law & Business, UT Austin

Barry Smitherman, Partner, Energy Regulation, Vinson & Elkins **Max Yzaguirre**, CEO, The Yzaguirre Group, L.L.C.

5:30 – 8:00 Cleantech Across the Rio Grande: A CleanTX Signature Event Blanton Museum of Art • Register separately via CleanTX.org

The University of Texas at Austin 2016 Energy Week program for Tuesday, February 16 will examine "Mexico's Electric Power Sector Reform: the Role of Natural Gas and Renewables." The program will bring together policy officials, regulators, service providers, industrial consumers, operators, and finance and legal professionals from both sides of the border who understand the complexity of the electric power industry and the significance of Mexico's transition to a competitive market. Experts will share lessons learned and discuss common challenges and opportunities.

Mexico's recently enacted energy reform is intended to foster competitiveness and private investment throughout the electric power sector value chain in order to support economic growth and job creation by delivering competitively priced, reliable, clean, and secure electricity.

Today, Mexico accounts for one-fifth of all energy use in Latin America. Growth in demand is estimated to result in an increase of installed electric power generating capacity from 64 GW in 2013 to 118 GW in 2030. More than \$16 billion of investments are expected over the next few years, in infrastructure, renewable energy projects, and combined cycle natural gas generation plants.

U.S. natural gas exports to Mexico account for nearly half of the total U.S. natural gas exports and represented approximately 70% of total Mexican imports in 2014. Mexico's natural gas imports from the U.S. are expected to increase from 2.0 bcf/d to 5.0 bcf/d in 2020.

As of 2013, total renewable energy capacity in Mexico's power sector was 14.2GW out of 64GW total system capacity; hydropower represented 18% of that total, with wind and geothermal 4% combined. Mexico's goal of generating 35% of electricity from non-fossil sources by 2024 is considered an important step in achieving its recent COP 21 pledge to cap GHG emissions by 2026 and reduce carbon emissions 51 percent by 2030.

Panelists with legal, regulatory, wind, solar, and energy storage backgrounds will explore the challenges and opportunities facing various sources of renewable energy in Mexico's newly reformed energy marketplace, and discuss how to address barriers to cross-border trade and expansion as energy industries on both sides of the border continue to evolve.

Wednesday, February 17

Energy & Society

8:30 – 9:00	Registration and Continental Breakfast	2:45 – 3:00	Break
9:00 – 10:15	Panel: Food for Thought: Energy-Food Nexus Ty Vaughn, Monsanto Michael Webber, Professor of Mechanical Engineering and Deputy Director of the Energy Institute, UT Austin Rajeev Patel, Research Professor, LBJ School of Public Affairs, UT Austin (Moderator)	3:00 – 4:15	Panel: Regulatory Responses to Fracking Scott Anderson, Senior Policy Director, US Climate and Energy Program, Environmental Defense Fund Mike Smith, Executive Director, Interstate Oil & Gas Compact Commission Matt Lepore, Director of the Colorado Oil and Gas
10:15 – 10:30	Break		Conservation Commission, Colorado Department of
10:30 – 11:45	Panel: Water Initiatives in Texas: Energy, Technology, and Policy Charles Porter, Professor, St. Edward's University Brewster McCracken, Pecan Street, Inc. Darrell Peckham, Water Quest, Inc. Bridget Scanlon, Bureau of Economic Geology, UT Austin Jim Malewitz, Energy Reporter, Texas Tribune (Moderator)		Natural Resources John Smelko, Environmental and Regulatory Compliance Manager, North Region, Cabot Oil & Gas Corporation Melinda Taylor, Executive Director, KBH Center for Energy, Law & Business, UT Austin (Moderator)
11:45 – 12:00	Break	4:15 – 4:30	Break
12:00 – 1:15	Lunch and Keynote Speakers: Russell Gold, UT Energy Journalism Fellow and Journalist at the Wall Street Journal Seamus McGraw, Author of The End of Country: Dispatches from the Frack Zone	4:30 – 5:45	Panel: Powering the Cities of the Future Bert Haskell, Pecan Street Inc. Josh Rhodes, Postdoctoral Fellow, Energy Institute, UT Austin Roger Duncan, Research Fellow, Energy Institute,
1:15 – 1:30	Break		UT Austin
1:30 – 2:45	Panel: The Science of Fracking Rob Jackson, Professor, School of Earth, Energy & Environmental Sciences, Stanford University Cliff Frohlich, Associate Director, Institute for Geophysics, Includes Science of Geospieros and LITA vertice	Alliance Rekson, Professor, School of Earth, Energy & Petra Liedl, School of Archit (Moderator) Reception with Energy Thought Spence, Professor, School of Law and McCombs School ness, UT Austin (Moderator) Alliance Petra Liedl, School of Archit (Moderator) S:45 – 7:00 Reception with Energy Thought Clive Bar on Rainey Street Come to an open-bar happy had and Energy Thought Summit 2	Petra Liedl, School of Architecture, UT Austin
	David T. Allen, Professor, Department of Chemical Engineering, Cockrell School of Engineering, UT Austin David Spence, Professor, School of Law and McCombs School of Business, UT Austin (Moderator)		1 65 6
			Come to an open-bar happy hour sponsored by Zpryme and Energy Thought Summit 2016! Pre-registration required via http://tinyurl.com/zc9swtl .

Thursday, February 18

Utilities & the Grid

8:30 - 9:00	Registration and Continental Breakfast
9:00 – 10:15	Panel: Storage, Renewables, and Grid Management Genevieve Dufau-McCarthy, Solar City Bill Muston, Oncor Todd Kiehn, Active Power Ramkumar Krishnan, CTO, Fluidic Energy Fred Beach, Assistant Director, Energy Institute, UT Austin (Moderator)
10:15 – 10:30	Break
10:30 – 11:45	Panel: De-Carbonizing the Grid Khalil Shalabi, Austin Energy Beth Garza, Potomac Economics David Gee, Boston Consulting Group Jim Marston, Environmental Defense Fund Ross Baldick, Professor, Department of Electrical & Computer Engineering, UT Austin (Moderator)
11:45 – 12:00	Break
12:00 – 1:15	Lunch and UT Energy Poll Presentation: Sheril Kirshenbaum, Director, UT Energy Poll
1:15 – 1:30	Break
1:30 – 2:45	Panel: Financing Electrons The panel members will discuss such topics as the rationale for various financing structures, some history of these structures/strategies, and particular dynamics underway right now that will influence the generation mix.
	Kevin Howell, Illinois Power Generating Company Shaila Hossain, Captra Capital LLC John Hackney, Wells Fargo Andy Bowman, Pioneer Green Energy LLC Dave Tuttle, UT Austin (Moderator)

3:00 – 4:15 Panel: Menace or Miracle? Rethinking Nuclear Waste Managing radioactive waste in the United States has been a contentious issue for decades, and it likely hinders the expansion of nuclear power. But what if spent nuclear fuel isn't really spent, just partly used?

2:45-3:00 Break

Charles Maguire, Texas Commission on Environmental Quality

Steve Biegalski, Director, Nuclear Engineering Laboratory, UT Austin Monty Humble, AFCI Texas Jessica Lovering, Breakthrough

Bob Hebner, Director, Center for Electromechanics, UT Austin (Moderator)

- 4:15 6:15 Happy Hour / Networking
 Poster Competition People's Choice Voting
- 6:15 6:45 Award Presentations for Poster and Start-up Competitions

After the panels, please join us in a Happy Hour Co-Hosted with Young Professionals in Energy (Austin Chapter) and view the outstanding energy-related posters included in our Poster Competition. You can cast your vote for the People's Choice award. We'll close out the night with an announcement of the winners.

	Tuesday	Wednesday
	Mexico's Electric Power Sector Reform	Energy & Society
		Registration 8:30 – 9:00
Session 1	Registration 10:00 – 11:00	Food for Thought: Energy-Food Nexus 9:00 – 10:15
Session 2	Opening Remarks: UT Austin President Gregory Fenves 11:00 – 11:30	Water Initiatives in Texas: Energy, Technology, and Policy 10:30 – 11:45
Session 3	Keynote Speaker followed by Lunch: Christopher Smith 11:30 – 1:30	Lunch and Keynote Speakers: Russell Gold and Seamus McGraw 12:00 – 1:15
Session 4	Electric Power Reform 1:30 – 2:45	The Science of Fracking 1:30 – 2:45
Session 5	The Role of Natural Gas 3:15 – 4:30	Regulatory Responses to Fracking 3:00 – 4:15
Session 6	Program Summary 4:30 – 5:00	Powering the Cities of the Future 4:30 - 5:45
Session 7	CleanTX Signature Event: Cleantech Across the Rio Grande 5:30 – 8:00	Reception with Energy Thought Summit (Clive Bar) 5:45 - 7:00

Thursday	Friday	
Utilities & The Grid	Challenges in the Oil & Gas Industry	
Registration 8:30 – 9:00	Registration 8:30 – 9:00	
Storage, Renewables, and Grid Management 9:00 – 10:15	Perpetuating the Boom? Advancements in Operations and Technology 9:00 – 10:15	Session 1
De-Carbonizing the Grid $10:30-11:45$	Financing Hydrocarbons 10:30 – 11:45	Session 2
Lunch and UT Energy Poll Presentation 12:00 – 1:15	Lunch and Keynote Speaker: Jonathan Lewis, Halliburton 12:00 – 1:15	Session 3
Financing Electrons 1:30 – 2:45	Energy and Geopolitics 1:30 – 2:45	Session 4
Menace or Miracle? Rethinking Nuclear Waste 3:00 – 4:15	Oil & Gas Limbo: How Low Can Price Go? 3:00 – 4:15	Session 5
Happy Hour / Networking with Poster Competition	Keynote Speaker: Helge Hove Haldorsen,	Session 6
4:15 – 6:15	4:15 – 5:30	
Award Presentations for Poster and Start-up Competitions	Reception Hosted by Texas Exes	Session 7
6:15 – 6:45	5:30 – 7:00	

Friday, February 19

Challenges in the Oil & Gas Industry

8:30 - 9:00	Registration and Continental Breakfast	1:30-2:45	Panel: Energy and Geopolitics
0.00 10.15	Donal, Domatusting the Doom? Advangements in		Ken Medlock, Baker Institute
9:00 – 10:15	Panel: Perpetuating the Boom? Advancements in		Corey Grindal, Cheniere
	Operations and Technology		Matthew Bey, Stratfor
	Brad Keating, Electric Drilling Technologies		Joshua Busby, UT Austin (Moderator)
	Kumar Ramurthy, Halliburton	• • • • • • • • •	
	Amit Singh, Chevron	2:45-3:00	Break
	Claudia Hackbarth, Shell	2.00 4.15	Developing Continuous Heart and Continuous Continuous
	Mukul Sharma, UT Austin (Moderator)	3:00-4:15	Panel: Oil & Gas Limbo: How Low Can Price Go?
10.15 10.20			Peter Nance, Que Advisors
10:15-10:30	Break		Arthur Berman, Labyrinth Consulting Services
10.20 11.45	Daniel Financia III-daniel		Kirk Goehring, Jones Energy
10:30 – 11:43	Panel: Financing Hydrocarbons		Xuan Si, Arete Investment
	Rob Baldwin, PwC		Sheridan Titman, UT Austin (Moderator)
	Cameron Dunn, Natural Gas Partners		
	Rob Jones, Shell Midstream Partners, GP LLC	4:15-5:30	Keynote Speaker: "E&P 2.0" Helge Hove Haldorsen,
	Thomas Hiddemen, KPMG		SPE President 2015 and Director General Statoil Mexico
	John Corrigan, Strategy&	5.00 5.00	
11 (5 10 00		5:30 - 7:00	Reception Hosted by Texas Exes
11:45 – 12:00	Break		Join UT alumni and the Texas Exes for a happy hour.
12:00 – 1:15	Lunch and Keynote Speaker		Texas Exes is the largest alumni organization of the
12.00 - 1.13	•		University of Texas. It invites you to socialize with your
	Jonathan Lewis, Senior Vice President, Completion and		former classmates and network with fellow Longhorns
	Production, Halliburton		who are also in the energy industry. Special guest
1:15 – 1:30	Break		speakers will be present, including the President of the
1.13 - 1.30	Dicar		Society of Petroleum Engineers.

Student Research

Poster Competition

The University of Texas at Austin

is one of the leading universities for energy research, but beyond that it is the center for interdisciplinary research, something that is necessary to gain an accurate perspective on energy issues and which is emphasized throughout Energy Week.

Research into the development of novel energy and resource-related technologies and the affiliated policies is a vital part of addressing the key energy-related challenges facing humanity in the 21st century. To promote the development of energy research in the academic community, UT Energy Week allows for full-time undergraduate and graduate students to participate in an interdisciplinary research poster competition.

Competition Judges

Environmental Sustainability

Mark Stehouwer, HES Specialist, Chevron

Dr. Kerry Kinney, L.P. Gilvin Centennial Professor in Engineering, Environmental and Water Resources Engineering

Energy Economics, Law, Communication, and Policy

Colin Meehan, Director Regulatory & Public Affairs, First Solar

Katherine Carmichael, Public Affairs Specialist, Texas Alliance of Energy Producers

Renewable Energy and Energy Storage

Karl Popham, Emerging Technologies and Electric Vehicles Manager, Austin Energy

John Herbst, Associate Director, Center for Electromechanics, The University of Texas at Austin

Fossil Fuels & Byproducts

Jolene Litzman, Manager, PcW Consulting

Michele Thomas, Upstream Portfolio Manager and Corporate Strategic Research, Exxon Mobil

Fossil Fuels & Byproducts

Student Research

Energy Economics, Law, Communication, and Policy

	Yaran Jin	Economic Evaluation of Voluntary Cap and Trade Programs: Evidence from Texas
5	Ankur Kumar	Optimal Sensor Placement for Energy Efficient Operation of Industrial H2 Plants through Smart Manufacturing
,	Abigail Ondeck	Economic Optimization of Combined Heat & Power for Residential Neighborhoods: A Data-Driven Modeling and Design Study
5	Richard Pattison	A Novel Model Reduction Framework to Enable Industrial Consumers to Shift Power Consumption Off- Peak
	Alex Zhou	Future of US Unconventional Play in Current Low Price Environment

Mahdi Haddad	Integration of Dynamic Microseismic Data with a True 3D Modeling of Hydraulic Fracture Propagation in Vaca Muerta Shale
Han Jiang	Characterization of microscale hydrocarbon flow pathway in fractured shale using gas adsorption
Pranav Karve	Inverse source problems for enhanced oil recovery by stress wave stimulation of oil reservoirs
Xiangyu Liu	Enhanced Zonal Isolation in Oil/Gas Wells using Geopolymers
Ehsan Moaseri	Copolymer-Grafted Stabilization of Superparamagnetic Iron Oxide Nanoclusters at High Ionic Strength and High Temperature Designed by Combinatorial Materials Chemistry
Arjang Shahriari	Electrically enhanced boiling heat transfer for desalination and materials processing applications
Sogo Shiozawa	Simulation of proppant transport with gravitational settling and fracture closure in a three-hydra
Kaustubh Shrivastava	Alternate Slug Fracturing using Polymer-Enhanced Foam
Qian Wu	Advanced Fiber Optic Sensors for Monitoring Zonal Isolation
Yifei Xu	Discrete Fracture Modeling of Complex Hydraulic Fracture Geometries in Reservoir Simulators

Competition Abstracts

		·	
		Jeffrey Bean, Dongyu Wang, Surya Dhulipala, Lea Hildebrandt Ruiz	Atmospheric Impacts of Hydraulic Fracturing: Ozone and Particulate Matter Production from flowback fluid
		Maggie Flicker Byers	Optimization of the Passive Recovery of Uranium from Seawater
	.	Hari S. Ganesh	Energy efficient operation of an industrial heat treating furnace
	billit	Krystian Perez	Analysis and Mitigation of High-Impact Residential Energy Loads from Smart Meter Data
	taina	Mahmood Shakiba, Seyyed Hosseini	Application of Pressure Pulse Test Analysis in CO2 Leakage Detection and Monitoring
	Sns	Zhuang Sun, Matthew T. Balhoff, Nicolas Espinoza	Pore-scale Modeling of the Effect of Cementation on Rock Indentation Test
	ıntal	Scott Vitter	Closed-loop predictive pump scheduling to maximize peak load shifting in the power sector
	Environmental Sustainability	Enakshi Wikramanayake	Flared natural gas and landfill gas based atmospheric water harvesting (AWH) for sustainable oilfield operations
	Envi	Ni Yan, Donald R. Paul, Benny D. Freeman	Fundamental Water and Ion Transport Studies in Model Sulfonated Crosslinked Polymers for Water Purification and Energy Generation Applications
	4)	Chi-Hao Chang, Arumugam Manthiram	From Trash to Treasure: Transforming Waste Newspaper to an Interlayer of Lithium-Sulfure Battery for Improving Electrochemical Performance
	rage	Sheng-Heng Chung, Arumugam Manthiram	High-loading Structural Cathodes for Electrochemically Stable Li-S Batteries
	y Stc	Yu Ding	A Bioinspired Organic Based Liquid Battery for Renewable Energy Storage
	ergy & Energy Storage	Li Ji	Enabling Dielectric Hard Breakdown in Application of Solar-Fuel-Conversion with Metal-Oxide-Semiconductor Photoelectrodes with Permalloy as a Novel Cocatalyst
	y & E	Alina LaPotin, Erich Schneider	Large Scale Energy Storage for Nuclear Power Plants
	nerg	Craig Milroy	Printed Electrodes for Scalable, High-areal-capacity Lithium-sulfur Batteries
	le Eı	Sean Wood	Simple Additive Could Enable the Use of Lithium Metal Anodes and Increase Battery Capacity by 10x
	Renewable E	Bryan Wygant, Karalee Jarvis, William Chemelewski, Oluwaniyi Mabayoje, Hugo Celio, C. Buddie Mullins	Structural and Catalytic Effects of Iron-and Scandium-Doping on a Strontium Cobalt Oxide Electrocatalyst for Water Oxidation

Energy Technology

Open Competition

The energy technology open competition showcases students, faculty and the general startup community with brilliant ideas and startups across several aspects of energy: Oil & Gas, Cleantech, Software, and Water & Energy Efficiency. Join us for technology exhibition and idea pitches by over 15 exciting new companies.

"What starts here changes the world"

Competition Judges

Kirk Coburn, Founder, SURGE Ventures

Becky Taylor, Shell

Mitch Jacobson, Austin Technology Incubator

Scott Kosch, Kosch Capital Management

Jitendra Jain, Office of Technology Commercialization

Bob Metcalfe, UT Austin

Andrew Johnston, Zpryme

Startup Teams

AeroClay LLC

Atom Mines LLC

EBIK

ExpertKnowledge expertknowledge.com

GNOSYS www.gnosys.com

Infinitoom www.infinitoom.net

Nexushaus www.nexushaus.com

Onboard Dynamics www.onboarddynamics.com

Recollect Energy

Seismos Inc. seismos.com

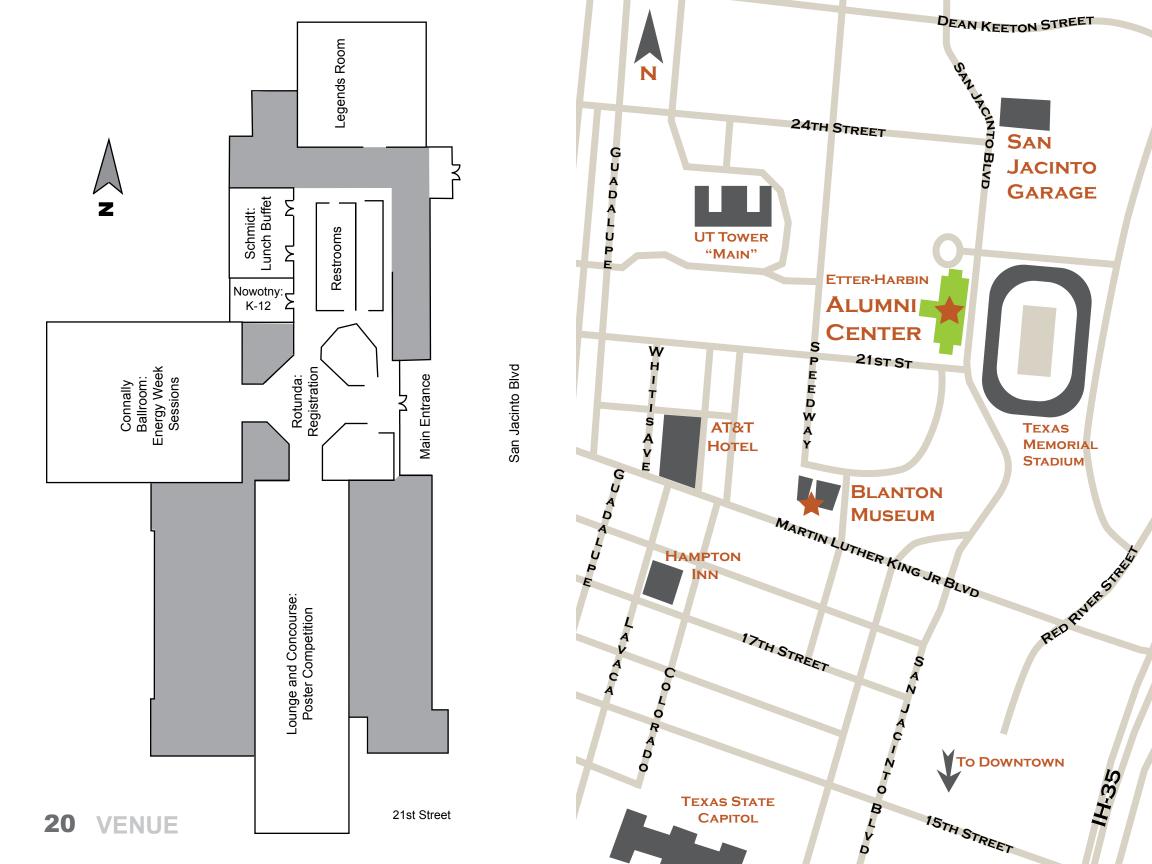
Simplify Solar www.simplifysolar.com

Texas Guadaloop

VERT Solar Finance www.vertsolar.com

Water Lens, LLC www.waterlensusa.com

Xyber Technologies www.xyber.tech



The University of Texas at Austin



CENTER FOR ENERGY. LAW & BUSINESS"







The University of Texas at Austin what starts here changes the world