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WHAT STARTS HERE CHANGES THE WORLD



UT
ENERGY
WEEK
2020

FEBRUARY 17 – 21, 2020

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ENERGY WEEK WIFI ACCESS
Connect to the *utguest* network, no code required.



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.

Jenny Sauer President
Dilge Kanoglu Vice Chair
Somtoochukwu Ik-Ejiofor Energy Week Chair
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Korede Akinpelumi VP of Professional Development
Upayan Mathkari VP of Entrepreneurship

UT ENERGY WEEK 2020

Welcome to the sixth UT Energy Week, an annual gathering of leading energy experts representing a broad spectrum of interests and perspectives. The conference highlights the interdisciplinary collaboration and sharing of knowledge we believe is essential in solving complex energy challenges facing our world.

UT Energy Week is organized by the Longhorn Energy Club in collaboration with the university's Energy Institute, and is supported by the KBH Center for Energy, Law & Business, the McCombs Energy Initiative, the Jackson School of Geosciences, the Cockrell School of Engineering, and other schools and colleges engaged in energy-related research across the UT campus. In addition to panels and presentations covering a wide range of vital energy topics, the Texas Journal of Oil, Gas, and Energy Law will host two days of continuing education courses during the weeklong event.

UT Energy Week is an opportunity for experts from academia, industry, government and regulatory agencies, and nonprofit organizations to express their insights on pressing energy issues and emerging trends; to highlight the work of students involved in energy research; and to demonstrate the depth and breadth of knowledge among scientists and other researchers working at UT Austin.

The 2020 program is inspired by the concept of "20/20 vision." This year, governments and corporations will face intense pressure to declare and invest in ambitious energy visions that will shape global dynamics and daily life for decades to come. Yet, uncertainties in international relations, supply chains, technological developments, and social and financial outcomes blur the chance for perfect 20/20 vision to inform today's energy decisions. UT Energy Week panelists and speakers will explore this tension between uncertainty and urgency for action throughout the conference. A detailed program with further detail about conference speakers is available at <https://energyweek.utexas.edu/2020-program/>.

This year's conference additionally features a research poster competition for students studying energy, a networking reception to encourage new connections between conference guests and UT students, as well as a breakfast for students to interact with women working in energy fields.

UT Energy Week is an exemplar of the breadth and depth of energy expertise and research excellence at UT Austin and provides a platform for the energy leaders of tomorrow.

Welcome to the world's premier energy university!

Sincerely,

Dr. Varun Rai
Director, Energy Institute

Jenny Sauer
President, Longhorn Energy Club

Tuesday, February 18

9:30 – 9:45 OPENING REMARKS

9:45 – 10:45 OPENING KEYNOTE: EMERGENT OR EPHEMERAL: MACRO THEMES IN POWER

Paul Hudson, President, General Infrastructure

10:45 – 11:45 GEOPOLITICAL RAMIFICATIONS OF THE ENERGY TRANSITION

Beyond 2020, how will the energy transition reshape the geopolitical landscape? The system of energy supply and demand has always been a key factor in international relations and geopolitical conflict. The current energy transition, which pits renewable energy sources and technologies against their fossil-fuel counterparts, has the potential to considerably disrupt the geopolitical landscape. This panel will explore geopolitical dynamics of the energy transition, considering uncertainties such as: will the transition shift power from and create instability within national fossil-fuel exporters? Will technological breakthroughs and falling costs fracture geopolitics along U.S. vs. China lines? Will political nationalism and an obsession with energy independence destroy any hope of international cooperation and plunge us further into a global climate crisis?

William Inboden, Executive Director and William Powers, Jr. Chair, William P. Clements, Jr. Center for National Security at The University of Texas at Austin (Moderator)

Morgan Bazilian, Professor and Director of the Payne Institute of Public Policy, Colorado School of Mines

Fred Beach, Lecturer, The University of Texas at Austin

Samantha Gross, Fellow, Foreign Policy, Energy Security and Climate Initiative, Brookings Institution

12:00 – 1:00 LUNCH KEYNOTE ADDRESS

As Assistant Secretary for the Office of Energy Efficiency and Renewable Energy (EERE) at the U.S. Department of Energy, Daniel Simmons leads EERE to promote affordable and reliable energy to enhance America's economic growth and energy security.

Daniel R. Simmons, Assistant Secretary of Energy Efficiency and Renewable Energy at the Department of Energy

A Clouded Energy Outlook

1:15 – 2:15 MAKING MINERALS GREAT AGAIN

In 2017, President Donald Trump issued Executive Order 13817, directing enhanced federal engagement in mineral security. A year later, the U.S. Department of Interior published a list of 35 mineral commodities considered critical to the economic and national security of the United States but which have highly vulnerable supply chains. Many of these critical materials are fundamental components of new energy technologies including gallium, indium, and tellurium for solar cells; lithium, graphite, cobalt, and nickel for batteries; and aluminum, copper, and rare earth elements for wind turbines. As energy-critical materials take on spotlight in federal policy, commercial operations are assessing opportunity in the face of uncertain mineral supply and demand, policy changes across the globe, and more. This panel convenes experts in mineral geology, policy, and commercial enterprise and will explore the importance of critical material opportunities and vulnerabilities in the energy sector. The panel will discuss the geography and politics of critical mineral dominance as well as whether and how certain critical mineral supplies may constrain the energy transition.

Richard Chuchla, Director, Energy and Earth Resources Graduate Program, The University of Texas at Austin (Moderator)

John Thompson, PetraScience Consultants

Roderick Eggert, Viola Vestal Coulter Foundation Chair in Mineral Economics, Colorado School of Mines

Diana Walters, Board of Directors, Atmos Energy and Alta Mesa Resources

2:30 – 3:30 FUELS FOR TOMORROW'S TRANSPORT

This panel will explore the role of competing fuel sources in a transitioning transportation sector. Petroleum-powered internal combustion engine (ICE) vehicles have dominated transportation for about a century. Increasingly, however, energy security and environmental considerations are placing pressure on the transportation industry to evolve. As this evolution unfolds, biofuels, electricity and hydrogen may gain a larger share of the transportation fuel mix that oil has traditionally dominated. During this hour, panelists will discuss the emerging technologies, business opportunities, and policy decisions shaping the transportation industry, focusing especially on which fuels may dominate various transportation market segments in the coming decades.

Kara Kockelman, Dewitt Greer Centennial Professor of Transportation Engineering, The University of Texas at Austin (Moderator)

Terry Alger, Director, Powertrain Engineering, Southwest Research Institute

David Raney, General Manager, Portfolio and Compliance Strategy, Toyota Motor North America

Zifei Yang, Passenger Vehicles Program Lead, International Council on Clean Transportation

John Reese, Downstream Policy & Advocacy Manager, Americas, Shell Oil Products US

Tuesday, February 18

A Clouded Energy Outlook

Tuesday schedule, continued

3:45 – 4:45 ENERGY DEVELOPMENT IN EMERGING ECONOMIES: LEGAL CHALLENGES

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The future of the global energy system goes well beyond the borders of the world's industrialized countries. The development of energy infrastructure in emerging economies of Latin America, Africa, and Asia will play a huge role in the outcome of the global energy transition effort. Policymakers in these regions face the unprecedented task of trying to advance their economies into the increasingly industrialized and globalized 21st century while adhering to mounting environmental pressures from the international community. This panel discusses the legal challenges for the development of energy projects in emerging markets. To what extent do the development policies of these countries take into account climate change/energy transition issues? How do outside investment interests from public and private entities shape the legal frameworks within these markets?

Richard Amato, Director, ATI Energy and ATI Mobility

Sean T. Long, Founder, President & CEO, Endeavor Energy

José María Lujambio, Energy Practice Director, Cacheaux, Cavazos & Newton

Carlos St. James, Director of Business Development, Americas, Voltabox

5:00 – 7:00 STUDENT RESEARCH COMPETITION & NETWORKING RECEPTION

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6:00 – 7:00 ENERGY TRADEOFFS: A BETTER UNDERSTANDING OF THE ISSUES SHAPING THE WORLD'S ENERGY NEEDS

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During this forum, panelists will engage in a discussion about careers in the energy industry and the need for communication, engagement and collaboration across diverse sectors and geographies as energy companies seek to meet the growing energy demand. The panelists will shed light on some of the myths about the industry.

Richard Chuchla, Director, Energy and Earth Resources Master's Program and Leslie Bowling Professor in Geological Sciences, Jackson School of Geosciences, The University of Texas at Austin

Reginald Devaul, Senior Structuring Analyst, BP NAGP

Garry Morehead, Surface Excellence and Assurance Manager, Shell Unconventionals

Tristan Aspray, Vice President of Upstream Integrated Solutions, ExxonMobil

7:30 STUDENT RESEARCH COMPETITION AWARDS PRESENTATION

All conference attendees are invited to explore the research posters and enjoy a reception in the Alumni Center Lounge and Concourse; additional details on pages 8-9.



UT's Energy Week aims to be a platform for innovative ideas, dialogues and holistic perspectives on both non-renewable and alternative energy. The University of Texas at Austin is a leading university for energy research, with renowned interdisciplinary research necessary for insightful perspectives on energy issues.

Research into the development of novel energy technologies, energy policy, and financial, economic, and legal solutions is a vital part of addressing key energy-related challenges facing humanity beyond 2020. To promote the development of energy research in the academic community, the UT Energy Week hosts an interdisciplinary research poster competition for both undergraduate and graduate students at UT.

Competition Categories:

(1) Renewable or Alternative Energy and Energy Storage Technologies

(2) Emerging Oil & Gas Technologies and Solutions

(3) Economic, Policy, and Legal Analyses

Student Research Poster Competition



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A panel of judges from both academia and industry will score research posters submitted by the students selected to present at the research competition. Prizes will be awarded to the two highest scoring posters from each competition category (there will be a third place depending on number of participants in each category) and there will be one overall crowd favorite and one overall best undergraduate poster:

First place	\$1,000
Second place	\$750
Third place	\$500
Crowd favorite	\$750
Best undergraduate	\$1,000

The competition will take place on Tuesday, February 18, 2020, from 5:00-7:00 p.m. in the Alumni Center and will be followed by a reception and announcement of the awards at 7:30 p.m.

Special thanks to the Cockrell School of Engineering for their ongoing support of the UT Energy Week Student Research Competition and to the judges who contribute their time to make this possible.

Tuesday, February 18th
A Clouded Energy Outlook

9:30 – 9:45 Opening Remarks

9:45 – 10:45 Welcome Keynote: Emergent or Ephemeral: Macro Themes in Power

10:45 – 11:45 Panel 1: Geopolitical Ramifications of the Energy Transition

12:00 – 1:00 Lunch Keynote Address:
Assistant Secretary of Energy Efficiency and Renewable Energy (EERE) at the Department of Energy, Daniel R. Simmons

1:15 – 2:15 Panel 2: Making Minerals Great Again

2:30 – 3:30 Panel 3: Fuels for Tomorrow's Transport

3:45 – 4:45 Panel 4: Energy Development in Emerging Economies: Legal Challenges

5:00 – 7:00 Student Research Competition & Networking Reception

6:00 – 7:00 Panel 5: Energy Tradeoffs: A Better Understanding of the Issues Shaping the World's Energy Needs

7:30 Student Research Competition Awards Ceremony

Wednesday, February 19th
Setting a 2020 Energy Vision

8:00 – 9:30 Women in Energy Breakfast (by invitation)

9:45 – 10:30 Keynote Conversation with Mark Vanderhelm

10:45 – 11:45 Panel 1: Energy Leadership: New Visions for a New Era

12:00 – 1:00 Lunch

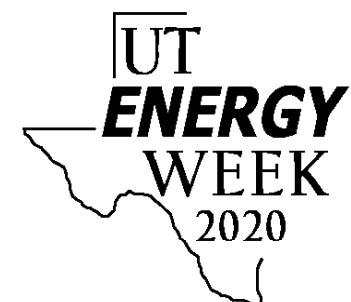
1:15 – 2:15 Panel 2: Policy and Business Implications of a Green New Deal

2:30 – 3:30 Panel 3: Will Technology Save the Day? Optimist and Realist Perspectives

3:45 – 4:45 Panel 4: The USA's Role and Importance in Global Energy Leadership

4:45 – 5:00 Closing Remarks

See pages 18-19 for additional UT Energy Week affiliated events to be held Thursday and Friday, February 20 and 21, 2020.



Wednesday, February 19

Setting a 2020 Energy Vision

8:00 – 9:30 INAUGURAL WOMEN IN ENERGY BREAKFAST

By invitation; sponsored by



9:45 – 10:30 KEYNOTE CONVERSATION WITH MARK VANDERHELM, VICE PRESIDENT OF ENERGY AND FACILITIES MANAGEMENT AT WALMART US

Moderators:

Reena Fram, Co-VP of Corporate Relations, Longhorn Energy Club

Vineet Raman, VP of Finance, Longhorn Energy Club

10:45 – 11:45 ENERGY LEADERSHIP:
NEW VISIONS FOR A NEW ERA

The 2020 Energy Week program is inspired by the concept of “20/20 vision.” This year, governments and corporations will face intense pressure to declare and invest in ambitious energy visions that will shape global dynamics and daily life for decades to come. Yet, uncertainties about international relations, technological developments, and social and financial consequences are blurring the chance that perfect 20/20 vision can inform today’s energy decisions. This panel spotlights some of the most experienced and successful corporations that are driving creative energy solutions on a global scale. Panelists will comment on what it takes to drive a new vision in a large organization as well as opportunities and challenges posed by pressures to operate environmentally and socially sustainable businesses.

Varun Rai, Director, Energy Institute, The University of Texas at Austin (Moderator)

Michael Wheeler, Principal Strategist, Equinor

John Pflueger, Principal Environmental Strategist, Dell

12:00 – 1:00 LUNCH

1:15 – 2:15 POLICY AND BUSINESS IMPLICATIONS OF A GREEN NEW DEAL

In February 2019, Rep. Alexandria Ocasio-Cortez introduced House Resolution 109 to lay out the goals and vision of a Green New Deal. While the resolution died in the halls of Congress, it marked a turning point for the Green New Deal movement by sparking immediate attention across the public sphere. The movement calls for swift and all-encompassing action to address anthropogenic climate change and transform the economy, with goals ranging from 100% renewable energy in the power sector, the elimination of carbon emissions from agriculture and manufacturing, upgrades to all buildings, jobs and wage guarantees, and more. As debate intensifies during the 2020 elections, uncertainty lingers about how the Green New Deal movement might manifest in policy. This panel of engineers, activists, and economists will explore the economic and social implications of the Green New Deal, commenting on the effects of various potential policy decisions.

David Spence, Baker Botts Chair in Law and Professor of Business, Government and Society, The University of Texas at Austin (Moderator)

Andrew Waxman, Assistant Professor of Economics and Public Policy, LBJ School of Public Affairs at The University of Texas at Austin

Benjamin Leibowicz, Assistant Professor in the Graduate Program in Operations Research and Industrial Engineering, Department of Mechanical Engineering at The University of Texas at Austin

Luke Metzger, Executive Director, Environment Texas

Karr Ingham, Economist, Petroleum Economist, and Executive Vice-President, Texas Alliance of Energy Producers

Wednesday schedule continues on next page

Wednesday, February 19

Setting a 2020 Energy Vision

Wednesday schedule, continued

2:30 – 3:30 WILL TECHNOLOGY SAVE THE DAY? OPTIMIST AND REALIST PERSPECTIVES

This panel will discuss how technology and media play a role in influencing the energy system's move toward low carbon emissions. The panel will discuss the merits of "techno-optimism" versus "techno-realism" with regard to the finitude and substitutability of resources that will be required to meet the world's energy needs. Additionally, the panel will explore the role of media in influencing social movement toward low-carbon business models and technology.

Carey King, Assistant Director, Research Scientist, Energy Institute, The University of Texas at Austin (Moderator)

Bob Jensen, Professor Emeritus, School of Journalism, The University of Texas at Austin

Clay Butler, Chief Executive Officer, 7X Energy

Jeffrey Ball, Scholar-in-Residence and Lecturer, Steyer-Taylor Center for Energy Policy and Finance at Stanford University and Stanford Law School

3:45 – 4:45 THE USA'S ROLE AND IMPORTANCE IN GLOBAL ENERGY LEADERSHIP

The panel will discuss how to balance conflicts between environmental issues and economic growth in a potential global climate agreement. Strong focus will be placed on whether and how the United States should provide the impetus for stronger international cooperation. Objectives and conclusions include:

- To understand the conflict and tradeoffs in international energy policies.*
- To discuss areas of compromise between competing opinions and objectives*
- To understand the role the United States should take in leading international policy.*
- To understand the future of transportation and electricity in terms of energy requirements and renewable energy potential.*
- To connect the future of transportation and electricity to international energy outcomes.*

Aldo Flores-Quiroga, Former Deputy Secretary of Energy of Mexico and Visiting Professor at the LBJ School of Public Affairs, The University of Texas at Austin

Josh Busby, Associate Professor, LBJ School of Public Affairs and Distinguished Scholar at the Robert S. Strauss Center for International Security and Law, The University of Texas at Austin

Etienne Cadestin, Founder and Global Chief Executive Officer, Longevity Partners

Robert Bryce, Author, Journalist, and Film Producer

4:45 – 5:00 CLOSING REMARKS

Monday, February 17

ENERGY WEEK – ENERGY ANALYTICS SESSION

1:00 – 5:00 PM, UT ALUMNI CENTER, LEGENDS ROOM

Presented by Center for Analytics and Transformative Technologies (CATT), the Energy Analytics session aims to highlight several aspects of the exciting applications of analytics in energy markets. Energy Analytics can be very broadly thought of as quantitative methods in the energy industry and includes artificial intelligence, machine learning, mathematical modeling, and optimization. We have brought together some exciting speakers that will highlight various trends and applications in both academia and the industry.

The Center for Analytics and Transformative Technologies (CATT) fosters interaction and collaboration among faculty, industry leaders, and students to understand and address significant business problems of value to both industry and academia. The center was created in collaboration with USAA to serve as the primary hub for research at the McCombs School of Business.



The University of Texas at Austin
Center for Analytics and
Transformative Technologies
McCombs School of Business

Energy Analytics Session

1:00 – 1:15	INTRO & WELCOME Varun Rai , Director, Energy Institute, and Associate Dean, LBJ School of Public Affairs, The University of Texas at Austin Susan Broniarczyk , Associate Dean for Research at McCombs School of Business, The University of Texas at Austin
1:15 – 2:00	INNOVATIVE USE CASES IN AI AND DATA ANALYTICS FOR ENERGY Steve Eglash , Director of Applied Energy Division at SLAC National Accelerator Laboratory, Stanford University
2:00 – 2:45	OPTION PRICES IN THE INDEX & COMMODITY MARKETS: THE MESSAGE FROM MARKETS Ehud Ronn , McCombs School of Business, The University of Texas at Austin
2:45 – 3:00	COFFEE BREAK
3:00 – 3:45	OVERVIEW OF ENERGY ANALYTICS IN PRACTICE Cory Glass , Phillips 66
3:45 – 4:30	ECONOMIC MODELS NEED BIOPHYSICAL PRINCIPLES Carey King , Assistant Director, Research Scientist, Energy Institute, The University of Texas at Austin
4:30 – 4:45	DISCUSSION, Q&A Kumar Muthuraman , Director, Center for Analytics and Transformative Technologies, McCombs School of Business, The University of Texas at Austin
4:45 – 5:00	CONCLUDING REMARKS Kumar Muthuraman Varun Rai

Thursday-Friday, February 20-21

2020 TJOGL SYMPOSIUM

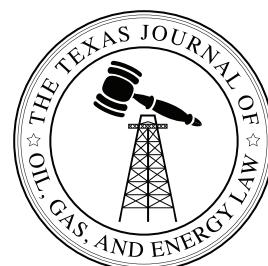
Thursday-Friday, February 20-21, 2020

Etter-Harbin Alumni Center

The Texas Journal of Oil, Gas, and Energy Law (TJOGL) is the largest student-run publication focusing on energy law scholarship in the United States; the Symposium brings together legal practitioners from across the state and country to discuss the latest developments in the world of oil, gas, and energy law.

This two-day event features dynamic speakers and leaders from various sectors of the energy industry. If you have any questions, please email the Symposium Director, Colton Lyons, at TJOGLSymposium@gmail.com.

Registration available at tjogel.org



Affiliated Events

PANEL: "SUSTAINABLE ENERGY DEVELOPMENT IN THE OIL AND GAS SECTOR"

Friday, February 21 from 3 p.m. – 4 p.m.

Chemical and Petroleum Engineering Building – CPE 2.214

The Hildebrand Department of Petroleum and Geosystems Engineering and Women in Petroleum and Geosystems Engineering (WPGE) Present:

"Sustainable Energy Development in the Oil and Gas Sector"

Join us for a Q&A with industry experts:

Karen Olson, Director of Technologies for Southwestern Energy Company

Leigh-Ann Russell, Head of Function Upstream Procurement and Supply Chain Management for BP

Margaret Ash, Former Manager of the Field Inspection Unit for the Colorado Oil & Gas Conservation Commission

RSVP: <http://bit.ly/PGEpanel22120>

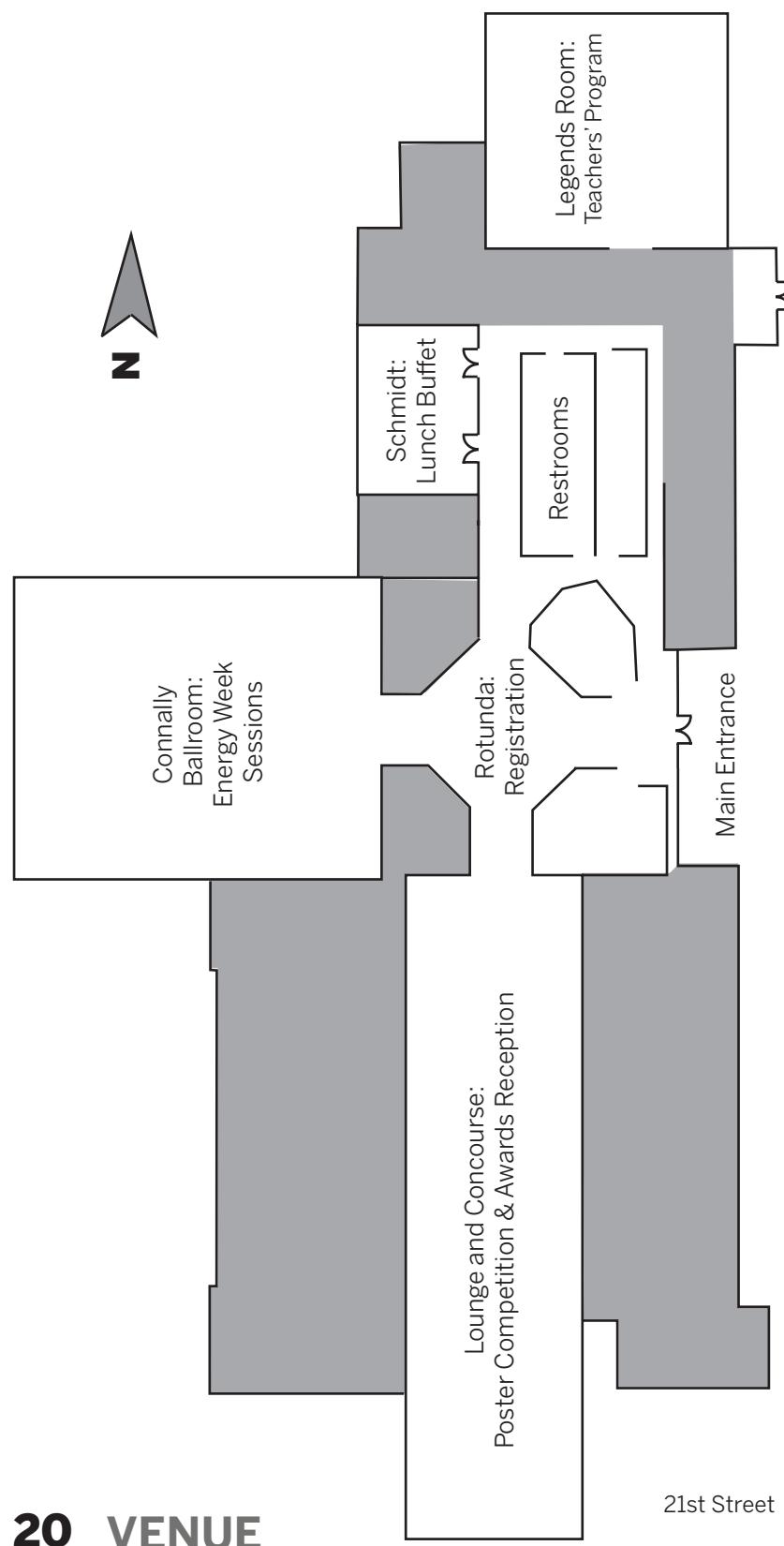
Refreshments and desserts to follow in the CPE Caudle Lounge



The University of Texas at Austin

Hildebrand Department of Petroleum and Geosystems Engineering

Cockrell School of Engineering



20 VENUE





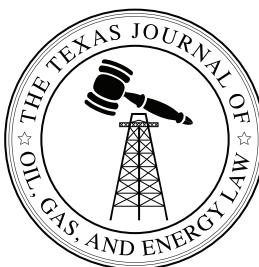
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