The Texas Energy Innovation Challenge (TEIC) is the signature program of Power Across Texas (PAT), a 501(c)3 non-profit. TEIC fosters development of relevant new ideas towards addressing significant energy issues in TX.

The 2015 TEIC third biennial competition challenged inter-disciplinary colleagues to solve an existing energy problem for Texans.

Research, evaluate & develop the most creative and economic use for water produced from hydraulic fracturing of wells, whether that solution includes recycling, disposal or discharge.

Texas oil and gas production is key for the US and the Texas economy. Water use by the oil and gas industry is expected to increase as a result of the shale revolution. As water intensive drilling techniques spread across the state, the water used by the oil and gas industry increases accordingly.

Meanwhile, since 2011, Texas has been experiencing drought conditions while simultaneously realizing a rapidly increasing population. The potential for energy self-sufficiency will substantially depend on industry’s success in developing integrated and sustainable water management practices. – *Sustainable Water Management in the Texas Oil and Gas Industry*

Tasks:

- An innovative, yet realistic and persuasive proposal for a non-commercialized method or technology; or a modification to a method or technology that is already commercialized;
- A business and financial model that demonstrates the financial viability and sustainability of the proposal;
- A description of any policy, law or regulatory opportunities or barriers that enable or curtail commercialization of your proposal, and proposed recommendations for any necessary changes;
- An understanding of the technical engineering aspects of the proposed technology or method;
- An overview of why this technology/method is value-added for the specific geological shale formation the proposal is addressing.

NOTE: Each project proposal must identify a specific shale formation.

Check out the full topic description of the 2015 Texas Energy Innovation Challenge and the PAT 2015 TEIC Rules & Evaluation Form.
Beginning in November 2014, UH’s interdisciplinary worked diligently on the TEIC. Internal presentations were held on April 10th, 2015 in the Engineering Building.

Faculty Advisors:
Konstantinos Kostarellos, PhD
(Petroleum Engineering Program)

Hanadi S. Rifai, Ph.D., P.E.
(Environmental Engineering Program)

S. Radha Radhakrishnan (MBA Bauer)

Zachary Bray (Law)

Maria Modelska

Participating Students:
Emily Sappington (Environmental Engineering)
Aparna Balasubramani (Environmental Engineering)
Rose Sobel (Environmental Engineering)
Amin Kiaghadi (Environmental Engineering)
Varun Sreenivas (MBA Bauer)
John Hwang (Law)
Caite Tanner (Law)
James Wilson (MBA Bauer)
Aeman Javed (Environmental Engineering)
Divya Dhimani (Environmental Engineering)
Bo Cao (Environmental Engineering)
Ali Masoudi
Phillip Harris (Law)
Abhra Biswas (Law)
Shanisha Smith (Law)
Rinki Mukherjee (MBA Bauer)
Ramanathan Muthiah (MBA Bauer)
Saket Maheshwari (MBA Bauer)

1st Place, $2,500 – Pipeline Technology
2nd Place, $2,500 – Geothermal Technology
2nd Place, $1,500 – Recycle-Reuse Technology
3rd place, $1,500 – Foam Technology

Mentors:
David Stuart, Rockwater Energy
David Harry, Rockwater Energy
The Power Across Texas TEIC was held on May 1, 2015 in room E1.026 at the Texas Capitol!

TUNE IN TO THE TEIC! Shale Magazine’s radio show, “In the Oil Patch” featured an interview with PAT Chairman Becky Klein discussing the 2015 Texas Energy Innovation Challenge. Listen to this interview on Shale’s website or on Soundcloud.


University of Texas at El Paso (Faculty Sponsors: Jennifer Clark, Dr. Shane Walker, and Dr. Mark Engle)

Oluwaseye Owoseni, Environmental Engineering
Stephanie Ray, Geological Sciences
Sam Simon, Graduate of Latin American and Border Studies

Texas A&M (Faculty Sponsors: David Burnett and John Pappas)

Nima Ghahremani, Environmental Engineering
Omar Ghannoum, Petroleum Engineering
Allana Robertson, Civil Environmental Engineering
Preston Tidwell, Petroleum Engineering

University of Houston (Faculty Sponsors: Dr. Ramanan Krishnamoorti, Dr. Hanadi Rifai, and S. Radha)

Amin Kiaghadi, PhD Environmental Engineering
Rose Sobel, PhD Environmental Engineering
Varun Sreenivas, MBA C.T.Bauer College of Business
Shanisha Smith, JD, LL.M., Energy, Environment, and Natural Resources Law and International Law

University of Texas at Austin (Faculty Sponsors: Dr. Fred Beach and Prof. John C. Butler)

Alex Gupta, McCombs School of Business
James Lamb, McCombs School of Business
Zhengwang (Lisa), Chemical Engineering

Texas Tech University (Faculty Sponsor: Dr. Danny Reible, Mukaddes Darwish and Michael Ryan)

Ebru Unal, PhD Petroleum Engineering
James Urban, MBA
Ritesh Sevanthi, PhD
Soraya Honarparvar, PhD, Chemical Engineering
2015 TEIC Steering Committee:

State Senator Charles Perry
(Chairman of the Senate Committee on Agriculture, Water & Rural Affairs)

State Senator Troy Fraser
(Chairman of the Senate Natural Resources & Economic Development Committee)

State Representative Jim Keffer
(Chairman of the House Natural Resources Committee)

Railroad Commission Chairman Christi Craddick
Railroad Commission Commissioner David Porter
Railroad Commission Commissioner Ryan Sitton
Power Across Texas • The Third Biennial • Texas Energy Innovation Challenge

Competition Day

1st Place - University of Houston ($10,000)
2nd Place - Texas Tech University ($7,500)
3rd Place - The University of Texas at Austin ($5,000)
4th Place - UTEP - The University of Texas at El Paso ($3,000)
5th Place - Texas A&M University ($1,500)

Karen Bondy, Sr. Vice President of Water Resources, Lower Colorado River Authority (LCRA)
Kym Bolado, Publisher/President, Shale Magazine
Mark Ellison, Regional Director of Sales, IDE Technologies
Omar Garcia, President, South Texas Energy & Economic Roundtable (STEER)
Brent Halldorson, Chief Operating Officer, Fountain Quail Water Management
Marilu Hastings, Vice President, Sustainability Program, Cynthia & George Mitchell Foundation
John Tintera, President, Texas Water Recycling Association (TXWRA)