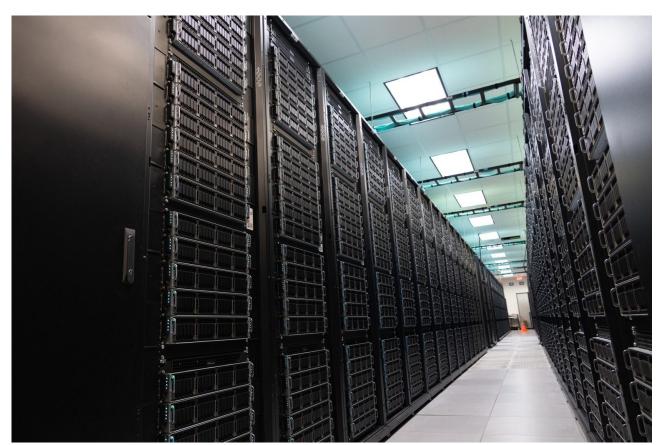




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# UT Launches Industrial Affiliates Program to Research Sustainable Data Center Growth

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(https://www.jsg.utexas.edu/news/files/2025-0918-Data-Center-Workshop-IMG 1309-scaled.jpg)

The University of Texas at Austin has launched a new Industrial Affiliates Program to help sustainably manage the growing data center industry in Texas. Pictured: High-performance computing servers at The UT Texas Advanced Computing Center. Credit: The Jackson School of Geosciences.

The rapid growth of AI is driving great interest in building large, power-hungry data centers across the state. The University of Texas at Austin has launched a new research consortium to help inform industry partners on options for more sustainable growth of this new industry.

The consortium – called <u>Collaborative Optimization & Management of Power Allocation, Surface & Subsurface strategies (COMPASS) (https://compass.beg.utexas.edu/)</u> – was announced last week at a data center workshop for industry leaders and policy makers led by the UT Bureau of Economic Geology, which is part of the Jackson School of Geosciences.

"Our goal is to bring all the players to the table," said Ning Lin, the principal investigator of COMPASS and chief economist at the bureau. "We will help everyone achieve a validated, robust level of knowledge and insights through data-driven research across the value chain."

The bureau, which was established in 1909, also serves as the State Geological Survey of Texas. For over a century, the bureau has led geoscience research that serves Texas, including collaborating with industry partners through research consortia.

COMPASS is one of 15 research consortia at the bureau, and is part of UT's Industrial Affiliates Programs (https://discoverytoimpact.utexas.edu/investors/industrial-affiliates-programs). These consortia work by bringing together industry partners with scientific experts in a



(https://www.jsg.utexas.edu/news/files/ Ning-Lin-high-res-scaled.jpg)
Ning Lin, the principal investigator of

COMPASS.

collaborative setting. Industry members contribute funding, data and questions that help guide experts in relevant research. Research findings are published in peer-reviewed journals, presented to consortia members, and are also available to the public.

"Collaboration with different stakeholders is key for creating impact and amplifying the critical role of digital infrastructure in our modern society and digital economy," said Santiago Suinaga, the CEO of Infrastructure Masons, a nonprofit professional association for digital infrastructure. "We are thrilled to partner with the Bureau of Economic Geology and The University of Texas at Austin with the COMPASS research consortium. We have seen the increasing interest and strategic position for Texas in the Data Center industry for AI growth. Our collaboration will help tackle obstacles and streamline responsible deployment of data centers across the state."

Lorena Moscardelli, the director of the bureau and the state geologist of Texas, said the bureau is well-poised to provide data and knowledge on surface and subsurface state resources as they relate to data centers and other large-load development projects, such as oil and gas production, advanced manufacturing, refining, and mining.

"Our researchers, including geoscientists, engineers and economists, are uniquely positioned to take on these challenges," said Moscardelli. "We know Texas from the ground up — literally. Our research spans everything from water availability to oil and gas production forecasts, surface infrastructure and socioeconomic conditions, and countless topics in between. As the State Geological Survey of Texas, we are committed to delivering insights and tools that keep Texas ahead of the curve."

Texas is a business-friendly, energy-rich state with abundant land and industrial infrastructure. These qualities have attracted an influx of data centers and other large-load development projects. However, there are a host of challenges facing data center growth. This includes energy supply, land and water use, community engagement, and workforce development.

Recently, the bureau and university researchers published a white paper, "Data Center Growth in Texas: Energy, Infrastructure, and Policy Pathways," (https://www.beg.utexas.edu/files/cee/

Data Center White Paper BEG.pdf) that outlines the challenges associated with data centers and large-load development projects, and some potential ways for managing them.

The white paper builds on bureau research conducted for the Electric Reliability Council of Texas (ERCOT) on how oil and gas related activities impact the Texas electrical grid.

In addition to its industrial members, COMPASS is engaging directly with communities near data centers and large-load projects to provide independent expertise and help local leaders and residents understand the trade-offs around power, water, land, and jobs. This will enable communities to make informed decisions, weigh options, and shape development strategies that align with their priorities.

"We're engaging with them to learn about their concerns, so we can find solutions and integrate them into our plan," said Lin, who is the lead author on the white paper. "We're also creating user guides to help these community members understand how data centers can impact the local economy, water resources, power supply, and other important issues."

COMPASS is accepting applications from organizations to join the collaborative research consortium. Members will help identify challenges and contribute to solutions, while also gaining a professional network of researchers and experts. The annual membership fee of \$50,000 grants members access to forecasting reports, a web-based interactive visualization and mapping database, policy briefs and recommendations, student research and pilot programs, and research findings before they're published in peer-reviewed scientific publications.

"Texas is really well-positioned for these projects," said Lin. "But these are fast-growing sectors, and there are many knowledge gaps. We are committed to shedding light on these issues and supporting the state's ambition to become a leading hub for Al innovation."

While the initial focus of COMPASS is on Texas, the research framework could be adapted to other regions facing similar challenges.

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