

# University of Texas at Austin

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- ▶ Role: Assoc. Professor, Sustainable Geo-energy Research and Engineering (SGRE) Lab Director
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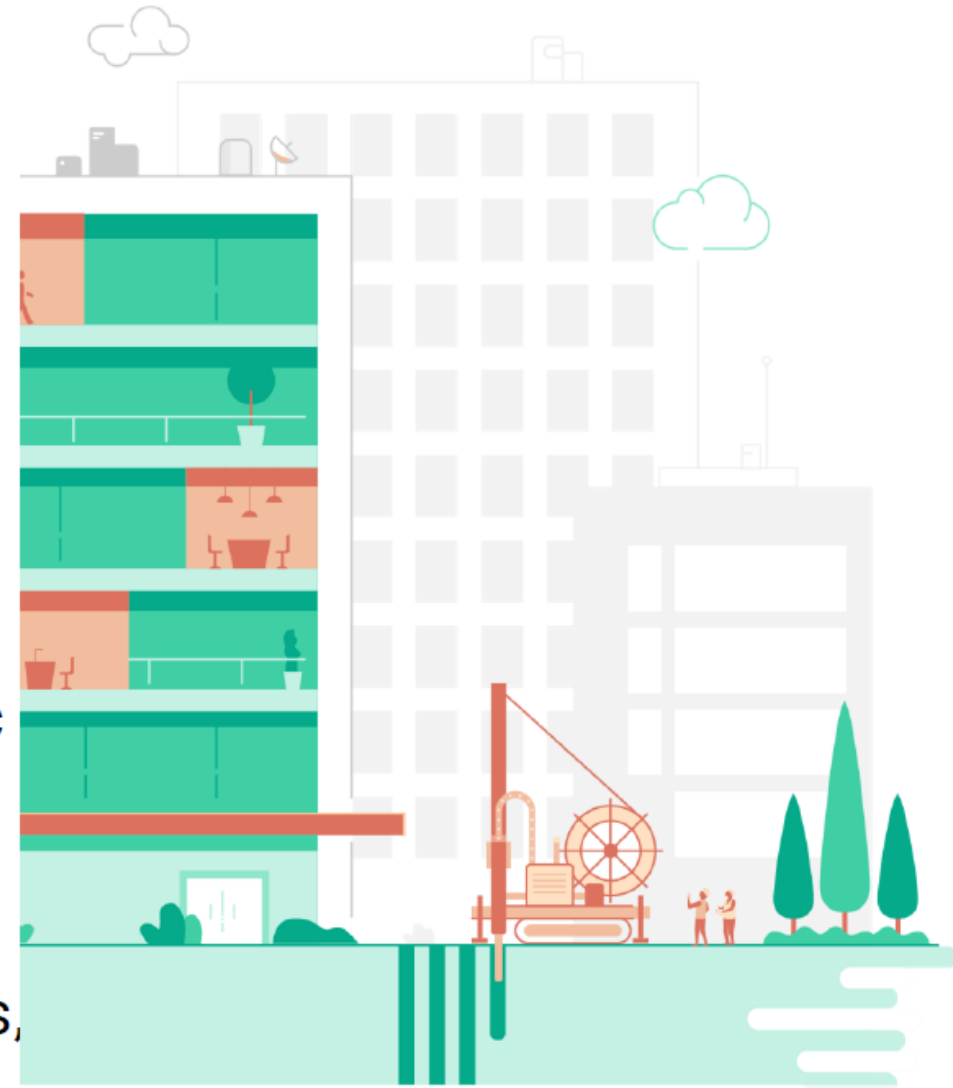
<https://www.pge.utexas.edu/facultystaff/faculty-directory/livescu>

- Expertise: drilling, subsurface science and engineering (former pressure pumping chief scientist at Baker Hughes, 36 US patents and patent applications; 2020-2023 Society of Petroleum Engineers Data Science and Engineering Technical Director)
- Expectations: Better understanding of the problem statement and collaborating/proposing solutions for a net-zero future



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- ▶ Multi-disciplinary innovation and R&D related to geothermal energy/hydrocarbon production
  - Drilling
  - Well construction
  - Monitoring and surveying
  - Downhole telemetry
  - Data science
- ▶ Collaborators: Ken Wisian (UT Bureau of Economic Geology), Prof. Birol Dindoruk (U. of Houston, member of the NAS), Dr. Carlos Fernandez (PNNL, chief scientist and subsurface systems and properties team lead), Taylor Mattie (Baker Hughes, geothermal innovations leader), Martin Rylance (THREE60 Energy, distinguished advisor)



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- ▶ Current SGRE lab capabilities (selected)
- ▶ Well injectivity, tunneling/radial drilling, and cementing integrity studies using a new large-scale, multi-purpose core flood apparatus at downhole conditions
  - 15-in. diameter x 3-ft length cores
- ▶ Heat transfer, multiphase flow and flow assurance studies using a new multi-purpose thermal multiphase flow loop
  - Any size single- and concentric-pipes
  - 10-ft long, horizontal, inclined, and vertical pipes
- ▶ Single- and multi-point telemetry
- ▶ Data analytics and machine learning algorithms for real-time operations and subsurface mapping