

## **KENNETH (KEN) W. WISIAN Ph.D. (Major General, USAF, retired)**

### **PROFESSIONAL EXPERIENCE**

**2020-Present**                      **Associate Director, Environmental Division, Bureau of Economic Geology, The Univ. of Texas at Austin**  
**Lecturer, Department of Geological Sciences**  
**Affiliate, Center for Space Research**  
**Affiliate, Center for Planetary Systems Habitability**  
**Fellow, British Interplanetary Society**  
**National Academies of Sciences, Engineering, and Medicine, Gulf Research Program, Health and Resilience Board member**

- Leading research efforts across a wide range of fields including; space exploration and resources, induced seismicity, renewable energy resources, remote sensing and disaster resiliency
- Current Research Projects
  - Geothermal Entrepreneurship Organization <https://www.texasgeo.org/>, DOE funded
  - USAF/AFWERX Phase 2 STTR for a geothermal power system at Ellington Field, TX
  - Geothermal assessment of Texas funded by the Mitchell Foundation

**2018-2020**                      **Executive Director – Disaster Research Program, Center for Space Research, The Univ. of Texas at Austin**

- Leading new program focusing researchers across the UT System on manmade and natural disaster related work
- Supporting start-up research center in Urban Air Mobility and Autonomous Aerial Vehicles
- Led the creation of an international research partnership on disasters with NIED (Japan)

**2017**                              **Chief Architect – Defense & Government, SparkCognition (an AI start-up)**

- Artificial Intelligence (AI) / Machine Learning (ML) applied to defense and government
- Teaming with DoD, prime contractors, scientists and engineers to develop solutions using state of the art AI

**2015-2017**                      **Senior Deputy Director – Coastal Protection & Disaster Recovery**  
**Texas General Land Office**

- Responsible for environmental and economic resiliency and restoration of coastal Texas & disaster recovery for the entire state
- Responsible for execution of billions of dollars of federal and state funds for research, resiliency projects and disaster recovery
- 24/7 State lead for oil spill response in coastal waters
- Five field offices plus Austin headquarters, total >150 personnel
- Led agency from “ad hoc” project execution to strategic master-planning, treating the coast as a complex whole
- Continual engagement with elected leaders at all levels (including legislative testimony)

**2011–2015**                      **Major General USAF/TXANG**  
**Deputy Adjutant General of Texas**  
**Commander, Texas Air National Guard**

- Command of 3200 personnel, \$500M facilities and equipment, \$100M budget at 5 facilities (incl. 3 schools)
- Innovator: designed and fielded significant emergency response resources
- Strategist: positioned the Texas Air National Guard (TXANG) to capitalize on the growth in cyber warfare and UAS/ drones
- Government/congressional relations expert: successfully fought for and protected resources in a declining budget
- International partnership builder: led international military engagements with Czech, Chilean and Mexican militaries
- Infrastructure protection and contingency response planning for Texas

**1993-2011**                      **Colonel USAF/TXANG, Wing, Group, Squadron & Base Commander**

- Wing Commander, 147RW: direct charge of 1000 personnel, \$150M facilities and equipment, \$35M budget
  - 24/7 combat operations (MQ-1 Predator) from home base, ground-breaking innovations in new form of war
  - Led mixed, full-time/part-time, military, union, federal civil service and state employee force
  - Took over a Wing in disarray – patiently, steadily rebuilt morale and culture
- Joint Reserve Base Commander (mayor of a small town): support of 5000 personnel from all branches of DoD
  - Supported three 24/7 no-fail national defense and rescue missions
- Visionary leader: developed and executed programs to position units with next-gen and disaster response capabilities
- Combat and command time in Iraq, Afghanistan and the Balkans: Bronze Star, Air Medal, Aerial Achievement Medal
- Instructor (classroom and in-air for 20+ years) responsible for Air Force continuing education and curriculum development

**1993-2001****Post doc, graduate student, instructor, Southern Methodist University**

- Responsible for leading edge applied physics research from concept to execution to peer-reviewed publication
  - Published more than two dozen papers and reports (10 as lead author) in geophysics
  - An editor and coordinator for World Geothermal Congress 2000
  - Field lead for several multi-institution and multi-national projects
  - Conducted contract research for geothermal, water, minerals and energy industries
  - Led graduate student team for teaching undergraduate courses

**1982-1992****Captain USAF, B-52 Navigator/Bombardier, Flight Test Navigator**

- Responsible for daily technical mission execution and leading-edge Developmental / Operational Test & Evaluation
  - Senior operator, instructor & evaluator at largest USAF bomber unit (2<sup>nd</sup> Bomb Wing, 8<sup>th</sup> AF, Strategic Air Command)
  - Graduate of the USAF Test Pilot School
  - Chief Test Navigator AC-130U / MC-130H - Led systems integration testing of one of the most complicated weapon systems in Air Force
    - Responsible for a team of dozens of engineers and flight crew in test planning, execution, analysis and reporting

**1979-1982****Undergraduate Research Assistant, Univ. of Texas, McDonald & NASA Kuiper Airborne Observatories**

- Responsible for public education, state of the art scientific equipment construction, programming, and data analysis

**EDUCATION**

1999	Ph.D. in Geophysics, Southern Methodist University
2004	M.S. in Strategic Studies, US Army War College
1990	M.S. in Geology, Centenary College of Louisiana
1990	Graduate, US Air Force Test Pilot School
1982	B.A. in Physics, University of Texas at Austin

**TEACHING**

2022	University of Texas at Austin	Lecturer	GEO371T/391 Fundamentals of Geothermal Systems
2021	University of Texas at Austin	Lecturer	UGS 303 Signature Course - <i>Life in the Universe</i>
2021	University of Texas at Austin	Co-instructor	<i>The Heart of Leadership</i> , Human Dimensions of Organization (HDO), College of Liberal Arts
2020	University of Texas at Austin	Lecturer	UGS 303 Signature Course - <i>Life in the Universe</i>
2020	Tarrant County College	Adjunct	GEOL 1305 <i>Environmental Science</i>
2008-2018	University of Texas at Arlington	Guest Lecturer on leadership	Goolsby Leadership Academy and MBA program
1993-1996	Southern Methodist University	Instructor	Undergraduate geology labs
1983-2009	US Air Force	Instructor	Navigation, Bombing, Airdrop, Leadership

**CURRICULUM DEVELOPMENT**

2021	Amer. Association of Petroleum Geologists	Geothermal 101 (CEUs)
2021	University of Southern California	Emergency Management Leadership (graduate)
2021	University of Texas at Austin, HDO	Heart of Leadership (professional seminar)
2020	University of Texas at Austin	Life in the Universe (undergraduate)
2019	Texas General Land Office	Disaster Recovery (professional certification)
2018	University of Texas at Austin	Innovation for Senior Military Leaders (professional seminar)
2015-16	University of Texas at San Antonio	Cyber Warfare for Gov/Mil/Civil Executives (professional seminar)
1983-2009	US Air Force	Navigation, Bombing, Airdrop, Leadership (CEUs)

**AWARDS, HONORS, SIGNIFICANT ACHIEVEMENTS**

2019	Fellow, British Interplanetary Society
2014	CAPSTONE General and Flag Officer Course, National Defense University
2013	Harvard, Kennedy School: Senior Executives in National and International Security course
2005&08	Afghanistan deployments, leadership roles, combat missions, Bronze Star Medal
2005&08	Hurricane disaster responses, Texas and Louisiana, leadership roles, operational missions
2003	Iraq deployment, combat missions, Air Medal
2003	Airborne commander, initial NASA shuttle Columbia search & rescue
2002-03	Created first in nation full Night Vision Qualification program for a National Guard C-130 unit
2002	Institute for National Security Studies grant to study India & Pakistan's Nuclear Doctrine and Deterrence

2000 Contributing editor, *Proceedings of the World Geothermal Congress 2000*  
 1999 Finalist, NASA biennial astronaut selection  
 1997-98 Albritton & Champlin research awards (Southern Methodist University)  
 1996-00 Multiple Balkan theater deployments, leadership roles, combat missions  
 1995 T.E. Williams Research Award for excellence in field research (Southern Methodist University)  
 1992-99 Roy M. Huffington Fellowship (Southern Methodist University)  
 1988 Sigma Gamma Epsilon Geology Honor Society  
 1982-83 Distinguished or Outstanding Graduate of Advanced Navigator, Navigator/Bombardier & B-52 training  
 1979-82 USAF ROTC scholarship, Distinguished Graduate  
 1981 National Sojourners Award (Shriners)

#### MEMBERSHIPS & CHARITIES

British Interplanetary Society - Fellow  
 American Institute of Aeronautics and Astronautics – Senior Member  
 Texas Military Forces Museum Foundation – Board of Directors, Past President  
 US Global Leadership Coalition – Texas Advisory Committee  
 Geothermal Rising (formerly the Geothermal Resources Council)  
 American Geophysical Union  
 World Affairs Council  
 National Guard Associations of the US and Texas  
 Air Force Association  
 The Long Now Foundation  
 Armand Bayou Nature Center - past Board of Directors (ex-officio)  
 Native Prairie Association of Texas - past Board of Directors

#### PEER REVIEWED PUBLICATIONS

Wisian, K.W., Geothermal Energy on Solar System Bodies, *J. Brit. Inter. Planet. Soc.*, 75:9, p. 315-320, September, 2022  
 Duffy, O.B., M. Hudec, F. Peel, G. Apps, A. Bump, L. Moscardelli, T. Dooley, S. Bhattacharya, K. Wisian, M. Shuster, The Role of Salt Tectonics in the Energy Transition: An Overview and Future Challenges, *Tektonika*, 2022 (submitted)  
 Wisian, K.W., S. Bhattacharya and M. Richards, Texas Geologies and Regions Ripe for Geothermal Development, in *The Future of Geothermal Energy in Texas*, J. Beard Ed., The Mitchell Foundation, 2022 (in press)  
 Wisian, K.W. and P. Boul, Geothermal and Other Texas Strategic Interests – Space and Defense, in *The Future of Geothermal Energy in Texas*, J. Beard Ed., The Mitchell Foundation, 2022 (in press)  
 Wisian, K.W. A Geothermal Strategy for Military Base Energy Independence, *Geothermal Resources Council Transactions*, 45, 1896-1900, 2021  
 Wisian, K.W. and J.W. Traphagan, The Search for Extraterrestrial Intelligence: A Realpolitik Consideration, *Space Policy* 52C, 101377, <https://doi.org/10.1016/j.spacepol.2020.101377>, 2020.  
 Traphagan, J.W. and K. W. Wisian, Protocols for Encounter with Extraterrestrials: lessons from the Covid-19 Pandemic, *J. Brit. Inter. Planet. Soc.* 73(7), July 2020. [https://www.bis-space.com/membership/jbis/2020/JBIS-v73-no07-July-2020\\_r0cgh4.pdf](https://www.bis-space.com/membership/jbis/2020/JBIS-v73-no07-July-2020_r0cgh4.pdf)  
 Wisian, K.W., and D.D. Blackwell, Numerical Modeling of Basin and Range Geothermal Systems, *Geothermics*, v.33:6, pp. 713-741, 2004.  
 Wisian, K.W. Numerical Modeling Basin and Range Geothermal Systems, Ph.D. Dissertation, 177p. 1999.  
 Wisian, K.W., D.D. Blackwell, and M. Richards, Heat flow in the Western United States and extensional geothermal systems, *Proceedings of the 24<sup>th</sup> Annual Stanford Workshop on Geothermal Reservoir Engineering*, 219-226, 1999.  
 Blackwell, D.D., K.W. Wisian, D. Benoit, and B. Gollan, Structure of the Dixie Valley Geothermal System. a “typical” Basin and Range Geothermal System, from thermal and gravity data, *Geothermal Resources Council Transaction*, v.23 pp. 525-531, 1999.  
 Wisian, K.W., D.D. Blackwell, and D. Benoit, Thermal Conditions in Beowawe Well Ginn 2-13, *Geothermal Resources Council Transaction*, v.22, 1998.  
 Wisian, K.W., D.D. Blackwell, S. Bellani, J.A. Henfling, R.A. Norman, P.C. Lysne, A. Förster and J. Schrötter, Field comparison of conventional and new technology temperature logging systems, *Geothermics*, v.27:2, pp. 131-141, 1998.  
 Matava, K, R.K. Nishimori, D.D. Blackwell, and K.W. Wisian, Salt Domes as Vertical Migration Pathways for Basin Fluids, American Geophysical Union fall session, *EOS*, v. 79, 1998.  
 Wisian, K.W., D.D. Blackwell, B. Teplow, and T. Meidev, Interpretation of geophysical data for the Vale Oregon, geothermal system, *Geothermal Resources Council Transaction*, v.20, pp. 435-438, 1996.  
 Wisian, K.W., D.D. Blackwell, S. Bellani, J.A. Henfling, R.A. Norman, P.C. Lysne, A. Förster and J. Schrötter, How hot is it? (a comparison of advanced technology temperature logging systems), *Geothermal Resources Council Transaction*, v.20, pp. 427-434, 1996.  
 Blackwell, D.D., J.L. Steele, and K.W. Wisian, Results of Geothermal Resource Evaluation For the Eastern United States, *Geothermal Resources Council Transactions*, Vol. 18, pp. 161-164, 1994.

## NON-PEER REVIEWED PUBLICATIONS

- Wisian, K.W. On SETI, International Law, and Realpolitik *Centauri Dreams*, <https://www.centauri-dreams.org/2020/05/22/on-seti-international-law-and-realpolitik/>, May 22, 2020.
- Wisian, K.W., *First Contact in Space Protocols*, *Centauri Dreams*, <http://www.centauri-dreams.org/?p=35612>, May 13, 2016.
- Wisian, K.W., *Military Planning for Interstellar Flight*, 100 Year Starship 2014 Symposium Conference Proceedings, 100 Year Starship, pp. 311-322, 2014.
- Wisian, K.W., D.D. Blackwell, and M. Richards, *Correlation of surface heat loss and total energy production for geothermal systems*, *5<sup>th</sup> International Workshop on Heat Flow and the Lithosphere Structure*, Geophysical Institute, Academy of Sciences of the Czech Republic, 2001.
- Wisian, K.W., *Insights into extensional geothermal systems from numerical modeling*, *Proceedings of the World Geothermal Congress 2000*, CD-ROM, 2000.
- Blackwell, D.D., K.W. Wisian, and G.R. Beardsmore, *Application of temperature logging technology to increasing the accuracy of basin thermal models*, *Applications of Emerging Technologies, Unconventional Methods in Exploration v.5*, Institute for the Study of Earth and Man, Dallas Texas, 1997.
- Blackwell, D.D., K.W. Wisian, R.K. Nishimori, and R.J. McMullen, *Using high-quality temperature logs to investigate the thermal structure of sedimentary basins*, *CSPG-SEPM Joint Convention Program and Abstracts*, p. 42, 1997.
- Blackwell, D.D., K.W. Wisian, and J.L. Steele, *Geothermal Regime in the Central and Eastern United States East of the Rocky Mountains*, *Proceedings of the World Geothermal Congress*, pp. 649-653, 1995.
- Blackwell, D.D., S. Kelley, and K.W. Wisian, *Thermal Regime of Sedimentary Basins Based on Precision Temperature Logs of Deep Wells*, *Proceedings: VIIth International Symposium on the Observation of the Continental Crust Through Drilling*, pp. 277-280, 1994.

## PRESENTATIONS

- 2022 *Digital RoundTable* - 5/18/2022 - Dr. Ken Wisian, <https://www.youtube.com/watch?v=zacZJO3lv74>
- 2022 Dr. Kenneth Wisian - *Masters & Founders S02:E05* (Podcast/Vlog), <https://www.youtube.com/watch?v=1XtMrknpAeE>
- 2022 *CMG Digital Roundtable*, Dr Ken Wisian, interviewed by Andres Carvallo, Llewelyn King and Johnny Butler, Texas State University, CIEDAR Program
- 2022 *A Conversation with Major General Ken Wisian*, How to be Wrong (Podcast) <https://newbooksnetwork.com/leadership-and-humility-a-conversation-with-major-general-ken-wisian>
- 2022 *Opportunities for Geothermal in the Caribbean*, panel discussion in; Caribbean Sustainable Energy Conference 2022
- 2021 *Power from Below the Ice: Geothermal Energy Generation on Icy Moons*, Interstellar Research Group conference, poster <https://irg.space/irg-2021-posters/>
- 2021 *A Geothermal Energy Strategy for Military Base Energy Independence*, Geothermal Rising Conference
- 2021 *Geothermal Power Potential in the outer Solar System*, British Interplanetary Society – Reinventing Space conference
- 2021 Texas Legislature (Joint Committee) Testimony on Geothermal Energy
- 2021 *The Department of Defense and Geothermal Energy Development*, Invited talk, University of North Dakota
- 2021 *Geothermal in Space*, Invited talk, Southern Methodist University
- 2021 Session Chair, *Geothermal Resources of the Gulf Coast*, GeoGulf 2021
- 2021 Panel Chair, Artificial Intelligence and Autonomous Unmanned Combat Air Vehicles, Air University Showcase, <https://auresearchshowcase.com/>
- 2021 *Geothermal Energy in the Outer Solar System*, UT Austin, Center for Planetary Systems Habitability, <https://habitability.utexas.edu/events/>
- 2021 *Reimagining Energy for the Department of Defense*, Panelist, <https://reimaginingenergy.afwerx.com/>
- 2020 *The Overlooked Risk of a SETI Success*, Center for Planetary Systems Habitability, Univ. of Texas at Austin, [https://utexas.zoom.us/rec/play/7pN4cr\\_9\\_zs3GtWQtwSDU6NwW9S6J6usgykcr\\_QFzUyzUCUBNwavYLoTa-rvn1I1DIF3vRY43AfZ5v7m?continueMode=true](https://utexas.zoom.us/rec/play/7pN4cr_9_zs3GtWQtwSDU6NwW9S6J6usgykcr_QFzUyzUCUBNwavYLoTa-rvn1I1DIF3vRY43AfZ5v7m?continueMode=true)
- 2020 Panelist on; *Our Geothermal Future*, Pivot 2020, <https://www.texasgeo.org/pivot2020>
- 2020 *Interview with Ken Wisian*, The Daily JO by John Oberg (Podcast) <https://podcasts.apple.com/us/podcast/019-ken-wisian/id1513017500?i=1000480893816>
- 2020 *Crisis Leadership* – Human Dimensions of Organization, University of Texas At Austin <https://hdo.utexas.edu/don't-panic!-timeless-principles-for-leading-through-a-crisis/>
- 2020 *Crisis Leadership* – Incubator ATX, Concordia University, Austin, TX <https://www.youtube.com/watch?v=BhCgzGXp6uA&feature=youtu.be>
- 2019 Panel Moderator – *DoD Innovation* (AFWERX, DIU & MD5) for UT McCombs Executive Education, Austin, TX
- 2018 Water Policy Summit – National Water Center, *Coastal Resiliency: Recent Experiences and a Perspective from Texas*
- 2017 *Keynote speaker* (on Artificial Intelligence), Weatherford Enterprise Software Conference, Houston, Texas
- 2016 Texas UAS Summit & Expo - *How Texas State Agencies Utilize Unmanned Aircraft Systems* (Expert Panel), Austin
- 2015 Starship Congress 2015 – *First contact in space protocols*, Drexel University, Philadelphia, PA

2014 100 Year Star Ship Conference – *Military planning for interstellar flight*, Houston  
2006-2019 University of Texas at Arlington College of Business – guest lecturer on leadership  
2006-2015 Numerous civic organizations on the National Guard/USAF/US military, Texas  
2004 Dickinson College - *On the connections between water resources and conflict*, Carlisle, PA  
2001 5<sup>th</sup> International Workshop on Heat Flow and the Lithosphere Structure, Czech Republic  
2000 World Geothermal Congress, Bepu, Japan  
1999 24<sup>th</sup> Annual Stanford Workshop on Geothermal Reservoir Engineering, Stanford, CA  
1996-1999 Geothermal Resources Council conference, San Diego, CA

### REPORTS

Wisian, K.W., India and Pakistan since 1998 and the United State's Effect on Nuclear Stability, *Institute for National Security Studies*, Jun 2004.  
Blackwell, D.D. and K.W. Wisian, Temperature tool calibration and temperature logging at Dixie Valley geothermal field, a report for: Oxbow Geothermal Corporation, 28p., 1998.  
Blackwell, D.D. and K.W. Wisian, Gravity analysis of the area of the Dixie Valley, Nevada geothermal system, a report for: Oxbow Geothermal Corporation & Caithness Resources Inc., 32p., 1997.  
Blackwell, D.D., G.R. Beardsmore, and K.W. Wisian, Thermal structure of the Bayou Bleu salt dome, Louisiana from precision temperature logs and thermal conductivity measurements, a report for: Mobil Exploration and Production Technology Company, 37p., 1997.  
Blackwell, D.D., K.W. Wisian, and M. Richards, Geothermal Resources of the United States based on heat flow and gradient information, Report for DOE contract #C91-103450, 50p., 1996.  
Blackwell, D.D. and K.W. Wisian, Interpretation of Thermal Results at Vale, Oregon Geothermal System, a report for: Trans-Pacific Geothermal Corporation, 46 p., 1995.  
Blackwell, D.D. and K.W. Wisian, S. Bellani, Temperature Logs at Barrick Goldstrike Mine, Carlin, Nevada, July 17 to July 20, 1995, a report for: Barrick Goldstrike Mines Inc., Hydrology section, 19 p., 1995.

### REVIEWER

2020-present      Space Policy (Elsevier)  
2021                Red Line Editorial (K-12 science)

### CURRENT/RECENT FUNDING

USAF, FA864921P0629, STTR Closed loop dry rock, PI, 2021  
NSF, NSF 2128403, 21-552 Innovation Corps - National Innovation Network Teams Program, CO-PI, 2021  
DOE, DE-EE0008791, The Geothermal Entrepreneurship Organization, CO-PI, 2020  
Mitchell Foundation (via the UT Energy Institute) The Subsurface Geothermal Resource of Texas

### IN THE PRESS

The Daily Beast, David Axe, Will First Contact With ET Spark a War Among Humans? One group of scientists believes humans could stumble into peace after detecting alien life. Another group isn't so sure. <https://www.thedailybeast.com/first-contact-with-aliens-might-be-more-likely-to-spark-war-among-humans-on-earth?ref=wrap>

David Axe

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### AERONAUTICAL INFORMATION

Rating: Master Navigator, Flight hours: 3800, combat hours: >100, high & medium risk test flight hours: >70  
Primary Aircraft Flown: RC-26B, C-130H, B-52G, MC-130H, AC-130U, T-38, F/RF-4