

HIROKO KITAJIMA

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EMPLOYMENT/APPOINTMENTS

<i>Associate Professor</i> , Texas A&M University, College Station, TX, USA	Sep. 2020 – present
<i>Assistant Professor</i> , Texas A&M University, College Station, TX, USA	Aug. 2014 – Aug. 2020
<i>Visiting Researcher</i> , Geological Survey of Japan, National Institute of Advanced Industrial Science and Technology (AIST), Ibaraki, Japan	Sep. 2023 – present; Aug. 2014 – Mar. 2020
<i>Research Scientist</i> , Geological Survey of Japan, AIST, Ibaraki, Japan	Apr. 2012 – Jul. 2014

EDUCATION

Postdoctoral Scholar, Rock Mechanics, The Pennsylvania State University	Oct. 2010 – Mar. 2012
Ph.D., Geology, Texas A&M University	Aug. 2004 – Dec. 2010
B.S., Science (Geology), Kyoto University, Kyoto, Japan	Apr. 2000 – Mar. 2004

NARRATIVE OF RESEARCH EXPERIENCE

Dr. Kitajima has expertise in experimental rock and soil mechanics, and her research focuses on understanding the deformation of rocks and sediments in the shallow crust and the mechanics of earthquakes and faulting. She runs the John W. Handin Laboratory for Experimental Rock Deformation at the Center for Tectonophysics of Texas A&M University, which is one of the largest and most broadly based high-pressure rock mechanics laboratories at any academic institution worldwide. The Handin Laboratory is equipped with a suite of rock deformation apparatus that can investigate rock deformation under simulated subsurface conditions from the Earth's surface to the upper mantle. She has participated in six international scientific ocean drilling expeditions, including a deep-riser drilling project offshore Japan, where she served as one of the chief scientists.

PUBLICATIONS (SELECTED)

- Yamaguchi, A., Kitajima, H., & Okutsu, N. (2026). IODP³ Expedition 502 “Impact of Petit-Spot Magmatism on Subduction Zone Seismicity and Global Geochemical Cycles” Scientific Prospectus, *Proceedings of the International Ocean Drilling Programme, 502*, 1-11.
- Reedlunn, B., Kitajima, H., Azzam, A. M. J., Iqbal, O., Jeon, I.-K., Chester, F. M. Kim, Y.-R. Chang, K.-W., Choens, C., & Ross, T. S. A. (2025), Damage-free cyclic loading of rock salt: Experiments and Constitutive modeling, *Proceedings of the 11th Conference on the Mechanical Behavior of Salt (SALTMECH XI)*, 13-23
- Cornard, P.H., Schleicher, A.M., Regalla, C., Hamahashi, M., Kitamura, M., Fukuchi, R., Pickering, K T. , Kitajima, H., & Wiersberg, T. (2025). Recent advances in the use of drill cuttings for determining subduction zone structure, stratigraphy, and stress state, *Geochemistry, Geophysics, Geosystems*, 26(5), e2024GC012094.
- Jeppson, T. N., & Kitajima, H. (2022). Velocity-Porosity Relations in Carbonate and Siliciclastic Subduction Zone Input Materials. *Geochemistry, Geophysics, Geosystems*, 23(1), e2021GC010074.
- Kitamura, M., Kitajima, H., Sone, H., Hamada, Y. & Hirose, T. (2019) Strength of the inner Nankai accretionary prism at IODP Site C0002, *Geophysical Research Letters*, 46(19), 10791-10799. doi.org/10.1029/2019GL083732.
- Valdez, R.D. II, Kitajima, H., & Saffer D. M. (2019), Effects of temperature on the frictional behavior of material from the Alpine Fault Zone, New Zealand, *Tectonophysics*, 762(5), 17-27, doi.org/10.1016/j.tecto.2019.04.022.
- Wallace, L.M., Ikari, M.J., Saffer, D.M., & Kitajima, H. (2019). Slow motion earthquakes: Taking the pulse of slow slip with scientific ocean drilling. *Oceanography*, 32(1), 106–118, doi.org/10.5670/oceanog.2019.131.

- Kitajima, H., Saffer, D. M., Sone, H., Tobin, H., & Hirose, T. (2017). In Situ Stress and Pore Pressure in the Deep Interior of the Nankai Accretionary Prism, Integrated Ocean Drilling Program Site C0002, *Geophysical Research Letters*, 44, 9644-9652, doi.org/10.1002/2017GL075127.
- Kitajima, H., Takahashi, M., Otsubo, M., Saffer, D.M., & Kimura, G. (2017). Strength and deformation behavior of the Shimanto accretionary complex across the Nobeoka thrust, *Island Arc*, 26, e12192, doi:10.1111/iar.12192.
- Wada, J., Kanagawa, K., Kitajima, H., Takahashi, M., Inoue, A., Hirose, T., Ando, J., & Noda, H. (2016). Frictional strength of ground dolerite gouge at a wide range of slip rates, *Journal of Geophysical Research Solid Earth*, 121, doi:10.1002/2015JB012013.
- Scuderi, M. M., Kitajima, H., Carpenter, B. M., Saffer, D. M., & Marone C. (2015). Evolution of permeability across the transition from brittle failure to cataclastic flow in porous siltstone, *Geochemistry, Geophysics, Geosystems*, 16, 2980-2993. doi:10.1002/2015GC005932
- Ma, S., Shimamoto, T., Yao, L., Togo, T., and Kitajima, H. (2014). A rotary-shear low to high-velocity friction apparatus in Beijing to study rock friction at plate to seismic slip rates, *Earthquake Science*, 27(5), 469-497, doi:10.1007/s11589-0140097-5.
- Kitajima, H., & Saffer, D. M. (2014). Consolidation state of incoming sediments to the Nankai Trough subduction zone: Implications for sediment deformation and properties, *Geochemistry, Geophysics, Geosystems*, 15, 2821-2839, doi:10.1002/2014GC005360.
- French, M. E., Kitajima, H., Chester, J. S., Chester, F. M., & Hirose, T. (2014). Displacement and dynamic weakening processes in smectite-rich gouge from the Central Deforming Zone of the San Andreas Fault, *Journal of Geophysical Research Solid Earth*, 119, 1777-1802, doi:10.1002/2013JB010757.
- Carpenter, B. M., Kitajima, H., Sutherland, R., Townend, J., Toy, V. G., & Saffer, D. M. (2014). Hydraulic and acoustic properties of the active Alpine Fault, New Zealand: Laboratory measurements on DFD-1 drill core, *Earth and Planetary Science Letters*, 390, 45-51, doi:10.1016/j.epsl.2013.12.023.
- Kitajima, H., & D. M. Saffer (2012), Elevated pore pressure and anomalously low stress in regions of low frequency earthquakes along the Nankai Trough subduction megathrust, *Geophysical Research Letters*, 39, L23301, doi:10.1029/2012GL053793. *selected for GRL editor's highlight papers and picked as Research Spotlight in AGU-EOS Newsletter.*
- Kitajima, H., Chester, F. M., & Biscontin G. (2012). Mechanical and hydraulic properties of Nankai accretionary prism sediments: Effect of stress path, *Geochemistry, Geophysics, Geosystems*, 13, Q0AD27 doi:10.1029/2012GC004124.
- Kitajima, H., Chester, F. M., & Chester J. S. (2011). Dynamic weakening of gouge layers in high-speed shear experiments: Assessment of temperature-dependent friction, thermal pressurization, and flash heating, *J. Geophys. Res.*, 116, B08309, doi:10.1029/2009JB007879.
- Kitajima, H., Chester, J. S., Chester, F. M., & Shimamoto, T. (2010). High-speed friction of disaggregated ultracataclasite in rotary shear: Characterization of frictional heating, mechanical behavior, and microstructure evolution, *Journal of Geophysical Research Solid Earth*, 115, B08408, doi:10.1029/2009JB007038.

HONORS/AWARDS

Francesco Paolo di Gangi/Heep Endowed Professor in Theoretical Geophysics, Texas A&M University	2022 – present
American Geophysical Union (AGU) – Japan Geoscience Union (JpGU) Taira Asahiko International Scientific Ocean Drilling Research Prize	2022
Presidential Impact Fellow, Texas A&M University	2021
National Science Foundation CAREER Award	2019
NSF-MARGINS/GeoPRISMS Postdoctoral Fellowship	2010 – 2012

PROFESSIONAL SOCIETY MEMBERSHIP

American Geophysical Union	2004 – present
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