HIROKO KITAJIMA

Center for Tectonophysics
Department of Geology & Geophysics
Texas A&M University
MS3115 TAMU
College Station, TX 77843-3115 USA
Phone: 979-458-2717, Email: kitaji@tamu.edu

EDUCATION

Ph.D., Geology, Texas A&M University, College Station, TX	2010
B.S., Science, Kyoto University, Kyoto, Japan	2004

RESEARCH INTERESTS

Rock Mechanics, Soil Mechanics, Structural Geology, Hydrogeology, Numerical Modeling, and Scientific Drilling

EMPLOYMENT

Assistant Professor, Texas A&M University, College Station, TX	2014 – present
Visiting Researcher, Geological Survey of Japan, Ibaraki, Japan	2014 – present
Tenure-track Research Scientist, Geological Survey of Japan, Ibaraki, Japan	2012 – 2014
Postdoctoral Scholar, The Pennsylvania State University, University Park, PA	2010 – 2012
Research and Teaching Assistant, Texas A&M University, College Station, TX	2005 – 2010
Student Worker, Texas A&M University, College Station, TX	2004 – 2005
Laboratory assistant, Kyoto University, Kyoto, Japan	2004
Part time editor, Tsumugi Publishing Company, Kyoto, Japan	2003 – 2004
Part time editor, Shigatsu Publishing Company, Osaka, Japan	2001 – 2004

PROFESSIONAL EXPERIENCE

S*hipboard physical properties specialist and group leader,* IODP Expedition 348	2013
Shipboard physical properties specialist and group leader, IODP Expedition 338	2012
Summer Intern, ConocoPhillips, Houston, TX	2009
Shipboard Physical Properties Scientist (JAMSTEC trainee), IODP Expedition 311	2005

INVITED TALKS

American Geophysical Union (San Francisco, CA)	Dec. 2015
Japan Geoscience Union Meeting (Makuhari, Japan)	May 2015
University of Oregon, Department of Geological Sciences (Eugene, OR)	Mar. 2015
UC Santa Cruz, Department of Earth and Planetary Sciences (Santa Cruz, CA)	Feb. 2015
University of Texas, Institute for Geophysics (Austin, TX)	Feb. 2015
Asia Oceania Geosciences Society Annual meeting (Sapporo, Japan)	July 2014
GFZ Potsdam (Potsdam, Germany)	May 2014
Kyoto University, Disaster Prevention Research Institute (Kyoto, Japan)	Apr. 2014
Japan Geoscience Union Meeting (Makuhari, Japan)	May 2013
Tohoku University, Graduate School of Science (Sendai, Japan)	June 2013
Texas A&M University, Department of Geology & Geophysics (College Station, TX)	Mar. 2013
Japan Geoscience Union Meeting (Makuhari, Japan)	May 2012
National Research Institute for Earth Science and Disaster Prevention (Tsukuba, Japan)	Jan. 2011
AIST, Geological Survey of Japan (Tsukuba, Japan)	Jan. 2011
The Pennsylvania State University, Department of Geosciences (State College, PA)	Oct. 2009
SCEC Dynamic Weakening Mechanisms Workshop (Palm Springs, CA)	Sep. 2009

GRANTS

Japan Society for the Promotion of Science (JSPS) Grants-in-Aid for Scientific Research (B):
Title: Micromechanics of compaction, shear, and lithification on granular materials at high pressures.
Co-PIs: Takashi Matsushima (PI), Takahiro Hatano, Keiko Watanabe, Kitajima and Masuhiro Beppu
Total: 6,500,000 JPY (~$78,000)
Kitajima: 1,400,000 JPY (~$16,800) [*GSJ, not transferrable to TAMU*]
Duration: 04/01/2014 – 03/31/2017.

Japan Society for the Promotion of Science (JSPS) Grants-in-Aid for Young Scientists (B)
Title: Deformation mechanism of the Nobeoka thrust mélange
PI: Kitajima
Total: 3,120,000 JPY (~$37,440) [*GSJ, not transferrable to TAMU*]
Duration: 04/01/2013 – 03/31/2015.

NSF-EAR (MARGINS/GeoPRISMS Post-Doctoral Fellowship Research)
Title: Evolution of sediment physical properties in the Nankai subduction zone and implications for the updip limit of seismogenesis
Postdoctoral Investigator Awardee: Kitajima
Co-PIs: Demian Saffer (PI) and Chris Marone
Total: $165,864
Duration: 03/01/2011 – 02/28/2014.
Note: Kitajima authored proposal. Saffer was PI because proposal was submitted through PSU before Kitajima's Ph.D. completion.

Southern California Earthquake Center (NSF/USGS) Collaborative Proposal
Title: Frictional behavior of disaggregated Punchbowl ultracataclasite at intermediate to high slip rates
Co-PIs: Kitajima (PI) and Judith Chester
Total: $28,445
Kitajima: $20,751
Duration: 02/01/2011 – 01/31/2012

GDL Foundation Fellowship
Title: Effects of stress states and cementation on physical properties of mudstones in the Nankai subduction zone
Awardee: Kitajima
PI: Demian Saffer
Total: $9,000
Duration: 05/01/2010 – 12/31/2011
Note: Kitajima authored proposal. Saffer was PI because proposal was submitted through PSU before Kitajima's Ph.D. completion

U.S. Science Support Program Schlanger Ocean Drilling Fellowship
Title: Sediment consolidation state and fluid flow properties of Nankai Trough and Cascadia margin accretionary zones
Awardee: Kitajima
Total: $28,000
Duration: 08/01/2006 – 01/31/2008

AAPG Grants-in-Aid program Grant
Awardee: Kitajima
Total: $1,220
Year: 2006

AWARDS

NSF-MARGINS/GeoPRISMS Postdoctoral Fellowship	2010 – 2012
ConocoPhillips Fellowship, College of Geoscience, Texas A&M University	2007, 2009
Handin Fellowship, College of Geoscience, Texas A&M University	2008
ConocoPhillips SPIRIT Scholars Program Scholarship, Texas A&M University	2006 – 2009
U.S. Science Support Program Schlanger Ocean Drilling Fellowship	2006 – 2008
Mel and Debby Friedman Scholarship, College of Geoscience, Texas A&M University	2006

PEER REVIEWED PUBLICATIONS

[* denotes Ph.D. students, ** denotes M.S. students, and *** denotes undergraduate students]

**Wada, J., K. Kanagawa, H. Kitajima, M. Takahashi, A. Inoue, T. Hirose, J. Ando, and H. Noda (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.

Note: Kitajima supervised and hosted Wada (Chiba Univ.) at Geological Survey of Japan.

*Scuderi, M. M., H. Kitajima, B. M. Carpenter, D. M. Saffer, and C. Marone (2015), Evolution of permeability across the transition from brittle failure to cataclastic flow in porous siltstone, *Geochemistry, Geophysics, Geosystems*, *16*, doi:10.1002/2015GC005932.

Note: Kitajima supervised Scuderi at PennState.

*Valdez, R.D., II, *R. M. Lauer, M. J. Ikari, H. Kitajima, and D. M. Saffer (2015), Data report: permeability and consolidation behavior of sediments from the northern Japan Trench subduction zone, IODP Site C0019. *In* Chester, F.M., Mori, J., Eguchi, N., Toczko, S., and the Expedition 343/343T Scientists, Proc. IODP, 343/343T: Tokyo (Integrated Ocean Drilling Program Management International, Inc.). doi: 10.2204/iodp.proc.343343T.201.2015.

Note: Kitajima supervised Valdez and Lauer at PennState.

Ma, S., T. Shimamoto, L. Yao, T. Togo, and H. Kitajima (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.

**Coble, C. B., M. E. French, F. M. Chester, J. S. Chester, and H. Kitajima (2014), In situ frictional properties of San Andreas Fault gouge at SAFOD, *Geophysical Journal International,*199, 956–967, doi: 10.1093/gji/ggu306.

Note: Kitajima helped Coble with experiments.

Kitajima, H., and D. M. Saffer (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., H. Kitajima, J. S. Chester, F. M. Chester, and T. Hirose (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.

Note: Kitajima helped French (TAMU) with experiments and temperature calculation.

*Carpenter, B. M., H. Kitajima, R. Sutherland, J. Townend, V. G. Toy, and D. M. Saffer (2014), Hydraulic and acoustic properties of the active Alpine Fault, New Zealand: Laboratory measurements on DFDP-1 drill core, *Earth and Planetary Science Letters*, *390*, 45-51, doi:10.1016/j.epsl.2013.12.023.

Note: Kitajima supervised Carpenter at PennState.

Moore, G. F., K. Kanagawa, M. Strasser, B. Dugan, L. Maeda, S. Toczko, and IODP Expedition 338 (2014), NanTroSEIZE Stage 3: NanTroSEIZE plate boundary deep riser 2, Sci. Dril., 17, 1-12, doi:10.5194/ sd-17-1-2014.

Kitajima, H., and 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.

Note: Selected GRL editor's highlight and AGU Research Spotlight in EOS.

Kitajima, H., F. M. Chester, and G. Biscontin (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., F. M. Chester, and J. S. Chester (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., J. S. Chester, F. M. Chester, and T. Shimamoto (2010), High-speed friction of disaggregated ultracataclasite in rotary shear: Characterization of frictional heating, mechanical behavior, and microstructure evolution, *J. Geophys. Res.*, *115*, B08408, doi:10.1029/2009JB007038.

Riedel, M., T. S. Collett, M. J. Malone, and the IODP Expedition 311 Scientists (2009), Gas hydrate drilling transect across northern Cascadia margin—IODP Expedition 311, *Geological Society London, Special Publications, 319, Sediment-hosted gas hydrates: New insights on natural and synthetic systems*, 11-19, doi:10.1144/SP319.2, 2009.

Riedel, M., T. S. Collett, M. J. Malone, and the IODP Expedition 311 Scientists (2006), Stages of gas-hydrate evolution on the northern Cascadia margin, *Scientific Drilling Journal*, No.3, 18-24, doi: 10.2204/iodp.sd.3.04.2006,2006.9.

(in review)

Kitajima, H., M. Takahashi, M. Otsubo, D. M. Saffer, and G. Kimura, Strength and deformation behavior of the Shimanto accretionary complex across the Nobeoka thrust, *Island Arc*.

(in preparation)

*Valdez, R.D. II, H. Kitajima, and D. M. Saffer, Patterns of in situ permeability and consolidation state in the Nankai Accretionary Complex.

Note: Valdez at PennState

Kitajima, H., D.M. Saffer, H. Sone, H. Tobin, and T. Hirose, Pore pressure and stress in deep interior of the Nankai accretionary wedge.

NON-PEER REVIEWED PUBLICATIONS

Tobin, H., T. Hirose, D. Saffer, S. Toczko, L. Maeda, Y. Kubo, and the Expedition 348 Scientists (2015), *Proceedings IODP,* 348: College Station, TX (Integrated Ocean Drilling Program). doi:10.2204/iodp.proc.348.2015.

Expedition 348 Scientists and Scientific Participants (2014), NanTroSEIZE Stage 3: NanTroSEIZE plate boundary deep riser 3, *IODP Prel. Rept.*, *348*. doi:10.2204/iodp.pr.348.2014.

Moore, G., K. Kanagawa, M. Strasser, B. Dugan, L. Maeda, S. Toczko, and the Expedition 338 Scientists (2013), NanTroSEIZE Stage 3: NanTroSEIZE plate boundary deep riser 2. *IODP Prel. Rept., 338*. doi: 10.2204/iodp.pr.338.2013.

Riedel, M., T. S. Collett, M. J. Malone and the IODP Expedition 311 Scientists (2006), *Proceedings of the Integrated Ocean Drilling Program volume 311*, doi:10.2204/iodp.proc.311.2006.

Expedition 311 Scientists (2005), *Integrated Ocean Drilling Program Expedition 311 Preliminary report*, Cascadia margin gas hydrates, doi:10.2204/iodp.pr.311.2005.

CONFERENCE PAPERS

***Sato, K., M. Seta, H. Kitajima, M. Takahashi, and T. Matsushima (2015), Evolution of grain size distribution during high-pressure compression and shear, *The Twenty-Eight KKHTCNN Symposium on Civil Engineering*, November 16-18, 2015, Bangkok, Thailand.

Note: Kitajima supervised Sato (Tsukuba Univ.) at Geological Survey of Japan.

Kitajima, H., T. Shimamoto, and W. Tanikawa (2004), Permeability structure and basin analysis of Miyazaki Group, *Proceedings of International Symposium on Methane Hydrates and Fluid Flow in Upper Accretionary Prisms*, 74-79.

Shimamoto, T., W. Tanikawa, H. Kitajima, Y. Aizawa, and M. Komizo (2004), Formation of accretionary prism and associated fluid flow: a research strategy, P*roceedings of International Symposium on Methane Hydrates and Fluid Flow in Upper Accretionary Prisms*, 1-7.

CONFERENCE ABSTRACTS

Otsubo, M., A. Miyakawa, H. Kitajima, K. Sato, A. Yamaguchi, G. Kimura (2016) Variations in stress, driving pore fluid pressure ratio and rock strength using orientations of mineral veins along Nobeoka Thrust, southwestern Japan, Japan Geoscience Union Meeting, STT18-11.

Saffer, D. M., L. M. Wallace, H. Kitajima, M. Ikari, J. Leeman, C. Marone, and M. Scuderi (2016), The hydrologic, metamorphic, and frictional habitat of shallow slow earthquakes, to be presented at AGU Chapman Conference on the Slow Slip Phenomena, 21-25 Feb.

Kitajima, H., D. M. Saffer, M. Takahashi, and M. Otsubo (2015), Rock strength and fault rheology at the Nankai subduction zone: Insight from laboratory experiments *(invited)*, Abstract MR24A-03 presented at 2015 Fall meeting, AGU, San Francisco, Calif., 14-18 Dec.

Kitajima, H., *R. Valdez, *M. Kitamura, H. Sone, D. M. Saffer, H. Tobin, T. Hirose, and *S.-T. Kuo (2015), In-situ stress and strength in the Nankai inner accretionary prism at Site C0002, IODP NanTroSEIZE, Abstract MR33C-2683 presented at 2015 Fall meeting, AGU, San Francisco, Calif., 14-18 Dec.

Note: Valdez (PennState), Kitamura (Hiroshima Univ., visiting scholar at TAMU in summer 2015), and Kuo (TAMU).

*Valdez, R. II, H. Kitajima, and D. Saffer (2015), Effect of lateral stress on the consolidation state of sediment from the Nankai Trough, Abstract MR33A-2643 presented at 2015 Fall meeting, AGU, San Francisco, Calif., 14-18 Dec.

Note: Valdez (PennState)

Kitajima, H. (2015), In-situ stress, rock strength, and fault rheology at the Nankai subduction zone: Insight from laboratory experiments, GeoPRISMS Theoretical and Experimental Institute on Subduction Cycles and Deformation, Redondo Beach, CA, 10/12-10/15/2015.

Saffer, D. M., H. Kitajima, J. Leeman, M. Ikari, C. Marone, and M. Scuderi (2015), In situ conditions and the mechanics of slow earthquakes along subduction megathrusts: Insights from laboratory experiments, GeoPRISMS Theoretical and Experimental Institute on Subduction Cycles and Deformation, Redondo Beach, CA, 10/12-10/15/2015.

Kitajima, H., and D. Saffer (2015), Estimation of in-situ stress and strength along the Nankai Trough subduction megathrust *(invited)*, Japan Geoscience Union Meeting, SSS02-16.

*Kitamura, M., H. Sone, H. Kitajima, and T. Hirose (2015), Viscoelasticity of the Nankai accretionary prism: Indentation test on sediments from NanTroSEIZE Expedition 348, Japan Geoscience Union Meeting, SSS29-11.

Note: Kitamura (Hiroshima Univ.)

Kitajima, H., and D. Saffer (2014), Quantification of in situ stress and pore pressure in the Nankai subduction zone: Effects of lithology and loading path, Abstract T43D-03 presented at 2014 Fall meeting, AGU, San Francisco, Calif., 15-19 Dec.

*Kitamura, M., H. Kitajima, P. Henry, *R. Valdez, M. Josh, H. Tobin, D. Saffer, T. Hirose, S. Toczko, and L. Maeda (2014), Physical properties of the Nankai inner accretionary prism sediments at Site C0002, IODP Expedition 348, Abstract T51A-4574 presented at 2014 Fall meeting, AGU, San Francisco, Calif., 15-19 Dec.

Note: Kitajima supervised Kitamura (Hiroshima Univ.) and Valdez (PennState) during Expedition 348.

*Valdez, R. II, H. Kitajima, and D. Saffer (2014), Effects of Temperature on the Frictional Behavior of Material from the Alpine Fault Zone, New Zealand, Abstract T11B-4551 presented at 2014 Fall meeting, AGU, San Francisco, Calif., 15-19 Dec.

Note: Kitajima supervised and hosted Valdez (PennState) at Geological Survey of Japan.

Tobin, H., D. Saffer, T. Hirose, D. Castillo, H. Kitajima, and H. Sone (2014), Pore Fluid Pressure and State of Stress Above the Plate Interface from Observations in a 3 Kilometer Deep Borehole: IODP Site C0002, Nankai Trough Subduction Zone, Abstract T43D-02 presented at 2014 Fall meeting, AGU, San Francisco, Calif., 15-19 Dec.

*Kitamura, M., H. Kitajima, P. Henry, *R. Valdez, M. Josh, and Expedition 348 Scientists (2014), Title Physical properties of Nankai Accretionary prism sediments at Site C0002, IODP Expedition 348, The 121st Annual Meeting of the Geological Society of Japan, T8-P-3.

Note: Kitajima supervised Kitamura (Hiroshima Univ.) and Valdez (PennState) during Expedition 348.

Kitajima, H., and D. M. Saffer (2014), Quantification of in situ pore pressure and stress in the Nankai subduction zone *(invited)*, Asia Oceania Geosciences Society Annual meeting, SE20-D4-PM2-HH-026.

Saffer, D. M., H. Kitajima, and M. Ikari (2014), The Hydrologic, Metamorphic, and Frictional Habitat of Shallow Slow Earthquakes, Asia Oceania Geosciences Society Annual meeting, SE20-D4-PM2-HH-027.

Takahashi, M., and H. Kitajima (2014), Illitization during Coseismic Slip, Asia Oceania Geosciences Society Annual meeting, SE20-D5-AM1-HH-033.

*Kitamura, M., H. Kitajima, P. Henry, *R. Valdez, M. Josh, and Expedition 348 Scientists (2014), Physical Properties of Nankai Inner Accretionary Prism Sediments at Site C0002, IODP Expedition 348, Asia Oceania Geosciences Society Annual meeting, SE20-D5-PM2-P-050.

Note: Kitajima supervised Kitamura (Hiroshima Univ.) and Valdez (PennState) during Expedition 348.

Kitajima, H., M. Takahashi, G. Kimura, A. Yamaguchi, S. Saito, M. Hamahashi, R. Fukuchi, J. Kameda, Y. Hamada, K. Fujimoto, Y. Hashimoto, Y. Kitamura, S. Hina, and M. Eida (2014), Mechanical properties of foliated cataclasites from the Nobeoka thrust, European Geosciences Union General Assembly.

*Kitamura, M., H. Kitajima, P. Henry, *R. Valdez, M. Josh, and Expedition 348 Scientists (2014), Physical properties of the Nankai inner accretionary prism at Site C0002, IODP Expedition 348, European Geosciences Union General Assembly.

Note: Kitajima supervised Kitamura (Hiroshima Univ.) and Valdez (PennState) during Expedition 348.

*Skarbek, R., M. Ikari, A. Hüpers, A. Rempel, D. Wilson, and H. Kitajima (2014) Approximate General Coulomb Model for Accretionary Prisms: An Integrated Study of the Kumano Transect, Nankai Subduction Zone, Southwest Japan, European Geosciences Union General Assembly.

Note: Kitajima helped Skarbek (Univ. of Oregon) with pore pressure estimation.

**Wada, J., H. Kitajima, M. Takahashi, K. Oohashi, A. Inoue, and K. Kanagawa (2014), Frictional properties of ground dolerite gouges at low to high slip velocities, Japan Geoscience Union Meeting, SSS32-05.

Note: Kitajima supervised and hosted Wada (Chiba Univ.) at Geological Survey of Japan.

Kitamura, M., H. Kitajima, P. Henry, R. Valdez, M. Josh, and Expedition 348 Scientists (2014), Physical properties of Nankai accretionary prism sediments at Site C0002, IODP Expedition 348, Japan Geoscience Union Meeting, SSS30-P13.

Takahashi, M., and H. Kitajima (2013), Smectite-illite transition during coseismic slip, Abstract T33C-2654 presented at 2013 Fall meeting, AGU, San Francisco, Calif., 9-13 Dec.

Dugan, B., A. Huepers, I. Song, H. Kitajima, and L. Esteban (2013), Porosity, Pore Size, and Permeability of Sediments from Site C0002, IODP Expedition 338, Abstract T31G-2601 presented at 2013 Fall meeting, AGU, San Francisco, Calif., 9-13 Dec.

*Valdez, R. D., *R. M. Lauer, M. Ikari, H. Kitajima, and D. M. Saffer (2013), Physical properties and Consolidation behavior of sediments from the N. Japan subduction zone, Abstract T31G-2599 presented at 2013 Fall meeting, AGU, San Francisco, Calif., 9-13 Dec.

Note: Kitajima supervised Valdez and Lauer at PennState.

Kitajima, H., and D. M. Saffer (2013), Stress states and physical properties along the Nankai Trough plate boundary *(invited)*, Japan Geoscience Union Meeting.

*Sawai, M., T. Shimamoto, T. Mitchell, H. Kitajima, and T. Hirose (2013), Frictional behavior and BET surface-area changes of SAFOD gouge at intermediate to seismic slip rates, European Geosciences Union General Assembly.

Note: Kitajima helped Sawai (Hiroshima Univ.) with her temperature calculation.

Kitajima, H., and D. M. Saffer (2012), Quantification of in situ pore pressure and stress in regions of low frequency earthquakes and anomalously low seismic velocity at the Nankai Trough, Abstract T23G-02 presented at 2012 Fall meeting, AGU, San Francisco, Calif., 3-7 Dec.

*Lauer, R. M., H. Kitajima, and D. M. Saffer (2012), Permeability and consolidation behavior of sediments subducting at the Japan Trench: Implications for physical properties in the high slip region of the 2011 Tohoku-Oki earthquake, Abstract T23G-06 presented at 2012 Fall meeting, AGU, San Francisco, Calif., 3-7 Dec.

Note: Kitajima supervised Lauer at PennState.

*Carpenter, B. M., M. Ikari, H. Kitajima, A. Kopf, C. Marone, and D. M. Saffer (2012), Frictional, Hydraulic, and Acoustic Properties of Alpine Fault DFDP-1 Core *(invited)*, Abstract T34D-07 presented at 2012 Fall meeting, AGU, San Francisco, Calif., 3-7 Dec.

Note: Kitajima supervised Carpenter at PennState.

Rathbun, A. P., *M. Fry, H. Kitajima, I. Song, *B. M. Carpenter, C. Marone, and D. M. Saffer (2012), Permeability and of the San Andreas Fault core and damage zone from SAFOD drill core, Abstract S21B-2506 presented at 2012 Fall meeting, AGU, San Francisco, Calif., 3-7 Dec.

Note: Kitajima supervised Fry and Carpenter at PennState.

Kitajima, H., and D. M. Saffer (2012), Quantification of in situ pore pressure and stress in regions of low frequency earthquakes and anomalously low seismic velocity, Nankai Trough subduction zone, Gordon Research Conference on Rock Deformation.

French, M., H. Kitajima, J. S. Chester, and F. M. Chester (2012), The microstructural evolution of smectite-rich SAFOD gouge during dynamic weakening, Gordon Research Conference on Rock Deformation.

Kitajima, H., and D. M. Saffer (2012), Stress state and deformation mechanism in Nankai Trough subduction system *(invited)*, Japan Geoscience Union Meeting, SSS29-08.

*Sawai, M., T. Shimamoto, T. Hirose, H. Kitajima, and T. Mitchell (2012), Frictional behavior and BET surface-area changes of SAFOD SDZ gouge at intermediate to high-velocity regimes, Japan Geoscience Union Meeting, SSS29-06.

Note: Kitajima helped Sawai (Hiroshima Univ.) with temperature calculation.

*Carpenter, B. M., H. Kitajima, and D. M. Saffer (2012), Hydraulic and Acoustic Properties of Alpine Fault DFDP1a Core, European Geosciences Union General Assembly 2012.

Note: Kitajima supervised Carpenter at PennState.

Kitajima, H., and D. M. Saffer (2011), Effects of stress paths on physical properties of sediments at the Nankai Trough, Abstract T12A-05 presented at 2011 Fall Meeting, AGU, San Francisco, Calif., 5-9 Dec.

*French, M. E., H. Kitajima, J. S. Chester, and F. M. Chester (2011), The mechanical behavior and weakening mechanisms of smectite-rich SAFOD gouge at seismic slip-rates, Abstract T13A-2347 presented at 2011 Fall Meeting, AGU, San Francisco, Calif., 5-9 Dec.

Note: Kitajima helped French (TAMU) with experiments and temperature calculation.

***Lipik, D., H. Kitajima, and D. M. Saffer (2011), Geotechnical Testing of Slope Sediments on the Nankai accretionary prism: Implications for Erosion and Unroofing, Abstract T51F-2416 presented at 2011 Fall Meeting, AGU, San Francisco, Calif., 5-9 Dec.

Note: Kitajima supervised Lipik at PennState.

*Olcott, K.A.H., H. Kitajima, and D. M. Saffer (2011), Constraints on in situ stresses in the Nankai Trough, offshore SW Japan from borehole breakouts and laboratory measurements of rock strength, Abstract T21B-2327 presented at 2011 Fall Meeting, AGU, San Francisco, Calif., 5-9 Dec.

Note: Kitajima supervised Olcott at PennState.

*Sawai, M., T. Shimamoto, T. Mitchell, and H. Kitajima (2011), Frictional Properties of SAFOD Gouge from the Creeping Portion of San Andreas Fault Zone at Intermediate Slip Rates, Seismological Society of Japan fall meeting.

Note: Kitajima helped Sawai (Hiroshima Univ.) with temperature calculation.

*French, M., H. Kitajima, J. S. Chester, and F. M. Chester (2011), Mechanical and microstructural observations of dynamic weakening in smectite-rich SAFOD gouge, Southern California Earthquake Center Annual Meeting, poster A-091.

Note: Kitajima helped French (TAMU) with experiments and temperature calculation.

Kitajima, H., M. French, J. S. Chester, F. M. Chester, and T. Hirose (2011), Frictional behavior of the SAFOD CDZ gouge at seismic slip rates, Earthscope National Meeting.

Kitajima, H., F. M. Chester, and G. Biscontin (2010), Mechanical and hydraulic properties of subducted sediments, Nankai Trough accretionary prism: Effect of stress path, *Eos Trans.* AGU, 91(52), Fall Meet. Suppl., Abstract T24-06.

Kitajima, H., F. M. Chester, and J. S. Chester (2010), Dynamic weakening of gouge layers by thermal pressurization and temperature-dependent friction in high-speed shear experiments, Southern California Earthquake Center Annual Meeting, poster 2-046.

Kitajima, H., J. S. Chester, F. M. Chester, and T. Shimamoto (2009), Characterization of frictional heating, mechanical behavior, and microstructure evolution of Punchbowl Fault ultracataclasite sheared at seismic slip rates: Implications for dynamic weakening mechanism, *Eos Trans.* AGU, 90(52), Fall Meet. Suppl., Abstract T41A-2002.

Kitajima, H., J. S. Chester, F. M. Chester, and T. Shimamoto (2009), High-speed friction of Punchbowl fault ultracataclasite in rotary shear: Characterization of frictional heating, mechanical behavior, and microstructure evolution, Southern California Earthquake Center Annual meeting, poster 2-110.

Kitajima, H., H. Noda, F. M. Chester, and T. Shimamoto (2007), Hydraulic and frictional properties of natural clay-rich sediments from ODP Leg 190 Nankai Trough and IODP Expedition 311 Cascadia Margin, *Eos Trans. AGU*, *88*(52), Fall Meet. Suppl., Abstract S21B-0569.

Kitajima, H., J. S. Chester, F. M. Chester, and T. Shimamoto (2007), Implications for Dynamic weakening of faulting from friction experiments of fault-rocks from SAFOD core and Punchbowl fault at seismic slip rates, Earthscope National Meeting.

Kitajima, H., J. S. Chester, F. M. Chester, and T. Shimamoto (2006), Dynamic weakening at seismic slip rates demonstrated for fault-rocks from SAFOD core and Punchbowl fault, *Eos Trans. AGU*, *87*(52), Fall Meet. Suppl., Abstract S41D-04.

Kitajima, H., J. S. Chester, T. Shimamoto, and F. M. Chester (2006), Frictional strength at seismic slip rates: A comparison between fault rocks taken at SAFOD and the Punchbowl fault ultracataclasite, Southern California Earthquake Center Annual Meeting.

Kitajima, H., T. Shimamoto, and W. Tanikawa (2005), Estimation of porosity and permeability structures of Miyazaki Group, *Eos Trans. AGU*, *86*(52), Fall Meet. Suppl., Abstract T53C-1445.

Chester, J. S., H. Kitajima, F. M. Chester, and T. Shimamoto (2005), Dynamic weakening of ultracataclasite during rotary shear at seismic slip rates, *AGU*, *86*(52), Fall Meet. Suppl., Abstract T21B-0472.

Kitajima, H., J. S. Chester, T. Shimamoto, and F. M. Chester (2005), Frictional strength of the Punchbowl fault ultracataclasite at seismic slip rates, Southern California Earthquake Center Annual meeting.

Shimamoto, T., W. Tanikawa, Y. Aizawa, H. Kitajima, and M. Komizo (2005), Maximum seal capacity of sedimentary rocks and carbon-dioxide sequestration and waste isolation problems, Joint Meeting for Earth and Planetary Science.

Shimamoto, T., W. Tanikawa, Y. Aizawa, H. Kitajima, M. Komizo, and F. Lehner (2005), Maximum seal capacity of sedimentary rocks as a framework concept for deep underground waste isolation, European Geosciences Union General Assembly.

Komizo, M., Y. Aizawa, H. Kitajima, and T. Shimamoto (2004), Internal structures of Kenzaki Anticline and the effect of deformation of high porous siltstone on the permeability: An example of Miura Group, The 111th Annual Meeting of the Geological Society of Japan.

Shimamoto, T., W. Tanikawa, H. Kitajima, M. Komizo, and Y. Aizawa (2004), 'Maximum seal capacity' as a framework concept for fluid flow, Asia Oceania Geosciences Society Annual Meeting.

Kitajima, H., T. Shimamoto, and W. Tanikawa (2004), Porosity-permeability structures and a basin analysis of Miyazaki Group, Joint Meeting for Earth and Planetary Science.

Kitajima, H., T. Shimamoto, and A. Murata (2003), Permeability of Miyazaki Formation and Nobeoka thrust fault zone, The 110th Annual Meeting of the Geological Society of Japan.

STUDENT SUPERVISION

Graduate student

- Szu-Ting Kuo (2015 – present, Ph.D. in Geology)

Undergraduate student

- Zachary Parra (2015 – present, B.S. in Geophysics)

Graduate thesis committee

- Leiyin Jiao (2015 – present, Ph.D. in Geophysics)
- Zhenhua He (2015 – present, Ph.D. in Geophysics)
- Aderonke Aderibidge (2015, Ph.D. in Petroleum Engineering, substitue for Dr. Yuefeng Sun on preliminary exam)

Visiting Scholar

- Manami Kitamura (06/02/2015 – 09/06/2015, Texas A&M University, Ph.D. student from Hiroshima University, Japan)
- Robert Valdez (06/14/2014-07/14/2014 and 08/01/2013 – 08/31/2013, Geological Survey of Japan, Ph.D. student from The Pennsylvania State University)

TEACHING

GEOP 615: *Experimental Rock Deformation*, Texas A&M University

Spring 2016

- 6 graduate students from Dept. of Geology and Geophysics, and 1 student from Dept. of Petroleum Engineering (one student participate in most class and lab lectures via skype)
- Developed group discussions on ~10 papers related to class topic.
- Developed a triaxial deformation apparatus in addition to the existing triaxial apparatus.
- Organized lab activities including the 1st group project (assigned all students to use two triaxial apparatus) and 2nd individual project.
- Trained two senior Tectonophysics Ph.D. students for student assistance in the lab.

Fall 2014

- 4 graduate students from Dept. of Geology and Geophysics, and 3 (+1 auditing) students from Dept. of Petroleum Engineering
- Developed a new writing assignment on stress/strain measurement in the crust at the beginning of the semester and went back to the topic at the end of the semester to address how the experimental results can constraint the stress in the crust.
- Organized lab activities including the 1st project (2 G&G and 2 PETE students in each group) and 2nd individual project.
- Trained two senior Tectonophysics Ph.D. students for student assistance in the lab.

GEOP 681: *Tectonophysics Seminar*, Texas A&M University, Spring 2016.

- 4 graduate students from Dept. of Geology and Geophysics
- Discussion on student oral and poster presentations and paper reviews
- Invited speakers from other universities

GEOL 311: *Principles of Geological Writing*, Texas A&M University, Spring 2015.

- 18 students
- Designed in-class activities including exercises, peer-review, and oral presentation.

GEOL 101: *Principles of Geology Laboratory*, Texas A&M University, Spring 2010.

OUTREACH ACTIVITIES

Judge of student research symposium, Texas A&M University, 03/01/2016.

Judge of student presentation for GeoPRISMS presentation award, AGU meeting, 12/16 – 12/17/2015.

Judge of student presentation for mineral and rock physics, seismology and tectonophysics focus group, AGU Fall meeting, 12/16 – 12/18/2015.

Judge of student research symposium, Texas A&M University, 04/10/2015.

Student presentation judge for Seismology focus group, AGU Fall meeting, 12/19/2014.

Lecture and rock mechanics lab tour for high school students (~40 students×2 groups), Texas A&M University, 10/23 – 10/24/2014.

Panel discussion, IODP-JDESC open house symposium for general public, National Museum of Nature and Science, Japan, 04/06/2014.

Lecture, Syukutoku Yono Senior High School, Japan, 02/07/2014.

Lecture and experiment demonstration, Open house for general public, Geological Survey of Japan, 07/20/2013.

Lecture and experiment demonstration, Open house for general public, Geological Survey of Japan, 07/21/2012.

SERVICES

Guest Associate Editor of Island Arc Special Issue, "*The mechanics and evolution of megathrusts within accretionary complexes*"	2015 – present
Member of Halbouty Chair Committee, Department of Geology & Geophysics	2015 – present
Member of Graduate Admission Committee, Department of Geology & Geophysics	2015 – present
Member of New Geoscience Building Working Groups for Facilities, College of Geosciences	Fall 2015
Member of Department Head Search Committee, Department of Geology & Geophysics	Spring 2015
IT Task force working group, Department of Geology & Geophysics	Fall 2014
Member of Search Committee for IT Microcomputer staff position, College of Geosciences	Fall 2014

WORKSHOP PARTICIPATION

Participant in GeoPRISMS Theoretical and Experimental Institute on Subduction Cycles and Deformation, Redondo Beach, CA, 10/12 – 10/15/2015.

Participant in IODP Workshop: Investigating Cascadia Subduction Zone Geodynamics Through Scientific Ocean Drilling, Seattle, WA, 04/29 – 05/01/2015.

Participant in ADVANCE Roadmap for a Successful Academic Career Workshop, Advance Center, Texas A&M University, 03/30 – 03/31/2015.

Participant in Workshop to cultivate and coordinate GeoPRISMS studies of the Hikurangi subduction margin, San Francisco, CA, 12/14/2014.

Participant in International workshop: Super Deep KAIKO Drilling "KANAME" and Beyond, Ministry of Education, Culture, Sports, Science and Technology (MEXT), Sapporo, Japan, 08/02/2014.

Participant in Tracking Trunamigenic Slips in the Japan Trench (JTRACK) Workshop, IODP, Tokyo, Japan, 05/15 – 05/17/2015.

Participant in Planning Workshop for the New Zealand Primary Site, NSF-GeoPRISMS, Wellington, New Zealand, 04/14/16/2014.

Participant in CHIKYU+10 International Workshop, the Japan Agency for Marine-Earth Science and Technology (JAMSTEC), Tokyo, Japan, 04/21 – 04/23/2013.

Participant in International Conference on a New Perspective of Great Earthquakes along Subduction Zones, MEXT, Kochi, Japan, 02/28 – 03/02/2012.

Participant in NSF-MARGINS Successor Planning Workshop, San Antonio, TX, 02/15-02/17/2010.

Participant and invited speaker in Southern California Earthquake Center (SCEC) Dynamic Weakening Mechanisms Workshop, Palm Springs, CA, 09/12 – 09/13/2009.

Participant in The Next Decade of The Seismogenic Zone Experiment (SEIZE), NSF-MARGINS, Mt. Hood, OR, 09/22 – 09/26, 2008.

Participant in IODP Workshop: Addressing Geologic Hazards through Ocean Drilling, Portland, OR, 08/26 – 30, 2007.

Participant in SCEC Workshop on Origin and Depth Extent of Pulverized Rock along Active Continental Faults in Southern California: Possible Insights to Be Gained from Shallow Boreholes, Palm Springs, 09/09 – 09/10/2006.