Local Address:
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Brad Parker Wham, Ph.D.

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Office Address:
1111 Eng. Dr. UCB 428
ECOT 441, Boulder, CO

EDUCATION

Ph.D. Civil and Environmental Engineering *Cornell University, December 2015*
Major: Geotechnical Engineering
Minors: Structural Engineering, Transportation Systems Engineering
Committee: Thomas D. O'Rourke (chair), Harry E. Stewart, Anthony R. Ingraffea

M.S. Civil and Environmental Engineering (Geotechnical) *Cornell University, May 2013*

M.Eng. Structural Science/Engineering (Cum Laude) *Cornell University, May 2011*

B.S. Civil and Environmental Engineering (Cum Laude) *Virginia Tech, May 2010*

SELECT HONORS & AWARDS

- G.E.O. Widera Literature Award for Outstanding Technical Paper, ASME *2018*
- John E. Perry Teaching Assistant Prize (awarded consecutive academic years) *2013 & 2014*
- Moles' Arturo Ressi de Cervia Scholarship (heavy civil construction) *Fall 2014*
- Eagle Scout, Boy Scouts of America *October 12, 2004*

RESEARCH & PROFESSIONAL EXPERIENCE

Research Assistant Professor & Faculty, CIEST, University of Colorado Boulder *Sept. 2017 – Present*

- Managing Director of the Center for Infrastructure, Energy, and Space Testing (CIEST)
- Responsible for successful operation of geotechnical centrifuges (400 and 15 g-ton instruments), fast-hybrid dynamic structural testing system, and materials testing including 1-millon lb four-post press
- Procurement of industry funded research projects and academic grants as project PI
- Currently advise five graduate students, manage hired undergraduate technicians (8), direct efforts of Center staff (3), and coordinate with various internal (faculty/students) and external users
- Dictate service fee structure, establish contractual agreements, and manage Center finances

Earthquake Reconnaissance, GEER, Kumamoto & Hokkaido, Japan *May 2016 & Sept. 2018*

- Selected as member of US Geotechnical Extreme Event Reconnaissance (GEER) Teams for rapid deployment to Kumamoto, Japan (2016) and Hokkaido, Japan (2018) to study seismic impacts
- Collaborated with US and Japanese colleagues from industry, government, and academia
- Focused on response of geographically distributed lifelines including water, gas, electric, telecommunications, and transportation systems, and their impact on recovery efforts
- Employed state-of-the-art field reconnaissance tools (e.g., terrestrial LiDAR, UAV imagery)

Postdoctoral Associate, Geotechnical Lifelines Group, Cornell University *Jan. 2016 – Sept. 2017*

- Managed day-to-day laboratory operations to characterize hazard-resistant underground infrastructure systems through component testing, large-scale earthquake simulations, and finite element analysis
- Supervised laboratory personnel (students, staff, contractors) and equipment use (e.g. high pressure hydraulics, data acquisition, precision measurement equipment, surveying instruments)
- Designed and fabricated laboratory equipment for full-scale experimentation
- Acted as liaison between laboratory staff, international industry sponsors, and government regulators
- Conducted the acquisition, interpretation, and communication of experimental data including preparation of research proposals, journal papers, and final reports and presentations to sponsors and regulators

Doctoral Researcher, Cornell University, Ithaca, NY *August 2011 – December 2015*

- Characterized and assessed existing and newly developed pipeline systems (e.g. ductile & cast iron, PVCO, cast-in-place polymeric liners (CIPL), reinforced concrete) through laboratory testing
- Designed and implemented over 50 full-scale experiments to characterize various buried pipeline systems and their response to large deformations imposed by various sources of ground movements

- Developed and validated 3D FEM simulations (ABAQUS) modeling pipeline behavior under excessive deformation and predicted joint leakage as structural failure criteria
- Coupled laboratory test results with FE analyses to predict pipeline response to tunneling-induced ground deformations
- Worked with government regulators (PHMSA) to quantify performance of field and mechanically-aged cast iron pipe with CIPL for gas distribution under vehicular and thermal loading conditions
- Coordinated with west coast municipalities and industry leaders to develop testing protocol for assessment of the next generation of hazard-resilient ductile iron pipelines

Graduate Field Researcher, GEER, Christchurch, NZ *August 2011*

- Participated in field reconnaissance under NSF grant, "RAPID: Liquefaction and Its Effects on Buildings & Lifelines in the February 22, 2011 Christchurch, New Zealand Earthquake"
- Documented liquefaction-induced damage to buildings, bridges, and underground infrastructure
- Performed SASW testing to develop shear wave velocity profiles of liquefiable subsurface
- Collected samples of soil ejecta for paleoliquefaction study from multiple occurrence sites

Quality Control Inspector, CTI Consultants Inc., Blacksburg, VA *Fall 2006, Summer 2007, 2008*

- Attained Nuclear Density Gauge certification and preformed onsite soil density and strength testing
- Inspected reinforced steel and concrete placement, slump and air entrainment tests, and cylinder casting
- Performed concrete strength testing, conducted soil analysis including standard/modified proctor tests
- Coordinated with construction managers and contractors on large, time-sensitive commercial projects

Operator/Installer, Wham Engineering Services Inc., Trenton, NJ *Summers 1999-2006, 2010*

- Remediated petroleum contaminated sites, designed/installed septic systems, among other projects
- Regularly operated construction equipment (e.g. excavator, bulldozer, backhoe, tandem dump truck)
- Managed teams for completion of commercial and residential construction projects

Survey Technician, Anderson and Associates, Blacksburg, VA *Summer 2009*

- Developed technical experience with AutoCAD Civil 3D, Total Station Instrument, GPS Equipment
- Conducted field survey work on various industrial, municipal, and residential projects

PUBLICATIONS

Refereed Journal Papers:

[J12] Ewais, A., **Wham, B.P.**, Soga, K., & O'Rourke, T.D. (2019). Fiber Optic Sensing Methods for Real-time Monitoring of Buried Pipelines. *ASCE Journal of Pipeline Systems Engineering and Practice*. (*in preparation).*

[J11] Tiznado, J.C., Dashti, S., Ledezma, C. & **Wham, B.P.** (2019). Performance of Embankments on Liquefiable Soils Improved with Dense Granular Columns: Observations from Case Histories and Centrifuge Experiments. *ASCE Journal of Geotechnical and Geoenvironmental Engineering.* (*submitted*).

[J10] **Wham, B.P.** & Davis, C.A. (2019). Buried Continuous and Segmented Pipes Subjected to Longitudinal Permanent Ground Deformation. *ASCE Journal of Pipeline Systems Engineering and Practice*. (*in press*).

[J9] Fisher, E.C., & **Wham, B.P.** (2019). Impact of Chronic Water Infrastructure Challenges to Mexico City's Seismic Resiliency. *Natural Hazards Review. (under review).*

[J8] Lin, T.H., Wu, Y., Soga, K., **Wham, B.P.**, Pariya-Ekkasut, C., Berker, B., O'Rourke, T.D. (2018). Buried Wireless Sensor Networks for Monitoring Pipeline Joint Leakage Caused by Large Ground Movements. *ASCE Journal of Pipeline Systems Engineering and Practice*. (*in press).*

[J7] Argyrou, C., O'Rourke, T. D., Stewart, H.E., **Wham, B.P.** (2018). Large-Scale Fault Rupture Tests on Pipelines Reinforced with Cured-In-Place Linings. *ASCE Journal of Geotechnical and Geoenvironmental Engineering.* Vol.145(3). 10.1061/(ASCE)GT.1943-5606.0002018.

[J6] **Wham, B.P.**, Dashti, S., Franke, K.W, Kayen, R., Oettle, N.K. (2018). Water Supply Damage Caused by the 2016 Kumamoto Earthquake. *Lowland Technology Intl. Journal: Special Ed. on 2016 Kumamoto Earthquake*. Vol.19(3).

[J5] **Wham, B.P.**, Argyrou, C., O'Rourke, T.D. (2017). Jointed Pipeline Response to Tunneling Induced Ground Deformation. *Canadian Geotechnical Journal: Special Issue on Pipeline Geotechnics*. Vol.53(11). 10.1139/cgj-2016-0054.

[J4*] **Wham, B.P.**, Argyrou, C., O'Rourke, T.D., Stewart, H.E., Bond, T.K. (2017) PVCO Pipeline Performance Under Large Ground Deformation. *ASME Journal of Pressure Vessel Technology*. Vol.139(1). 10.1115/1.4033939 [* recipient of 2017 G.E.O Widera Literature Award]

[J3] Kayen, R., Dashti, S., Kokusho, T., Hazarika, H., Franke, K., Oettle, N.K., **Wham, B.P**., Calderon, J.R. (2016). GEER Reconnaissance of the 2016 Kumamoto Earthquakes. *JSCE Journal of Disaster FactSheets*. FS2016-E-0007

[J2] **Wham, B.P.**, & O'Rourke, T.D. (2015). Jointed Pipeline Response to Large Ground Deformation. *ASCE Journal of Pipeline Systems Engineering and Practice*. Vol.7(1). 10.1061/(ASCE)PS.1949-1204.0000207

[J1] Zhong, Z., Aref. A., Bouziou, D., **Wham, B.P.**, Filiatrault, A., O'Rourke, T. D., Stewart, H. E. (2014). Seismic Testing of Critical Lifelines Rehabilitated with Cured in Place Pipeline Lining Technology. *Journal of Earthquake Engineering*. Vol.18(6). 10.1080/13632469.2014.916632

Refereed Conference Proceedings:

[C18] **Wham, B.P.**, Berger, B.A., & Davis, C.A. (2019). "Characterization of soil-structure interaction for seismic design of hazard-resistant pipeline systems". *Proc., 7th Int. Conf. Earthq. Geotech. Eng.* Roma, Italy. (*accepted*).

[C17] Tiznado, J.C., Dashti, S., **Wham, B.P.**, & Ledezma, C. (2019). "Centrifuge study of the seismic response of embankments on liquefiable soils improved with dense granular columns". *Proc., 7th Int. Conf. Earthq. Geotech. Eng.* Roma, Italy. (*accepted*).

[C16] **Wham, B.P.**, Davis, C.A., & Rajah, S. (2019). "Axial Connection Force Capacity Required for Buried Pipelines Subjected to Seismic Permanent Ground Displacement". *Proc., Pipelines 2019*. Nashville: American Society of Civil Engineers (ASCE). (*accepted)*.

[C15] Davis, C.A., Rajah, S., **Wham, B.P.**, & Heubach, W.F. (2019). "Strain Demands on Buried Pipelines from Earthquake-Induced Ground Movements". *Proc., Pipelines 2019*. Nashville: American Society of Civil Engineers (ASCE). (*accepted*).

[C14] **Wham, B.P.**, Berger, B.A., & O'Rourke, T.D. (2019) "Hazard-resistant Steel Pipeline Response to Large Fault Rupture." *Proceedings*, Geo-Congress 2019, Philadelphia, Pennsylvania, March 24-27.

[C13] Davis, C.A. & **Wham, B.P.** (2018) "Buried Hybrid-Segmented Pipes Subjected to Longitudinal Permanent Ground Deformation." *Proceedings*, 8th International Symposium on Earthquake Engineering for Lifelines and Critical Infrastructure Systems, Shenyang, China, October 17-19.

[C12] **Wham, B.P.**, Berger, B.A., Pariya-Ekkasut, C., O'Rourke, T.D., Stewart, H.E., Bond, T.K. (2018) "Achieving Resilient Water Networks: Experimental Performance Evaluation." *Proceedings*, 11th U.S. National Conference on Earthquake Engineering, Los Angeles, California, June 25-29.

[C11] **Wham, B.P.**, Berger, B.A., Pariya-Ekkasut, C., O'Rourke, T.D. (2018) "Hazard-resilient Pipeline Joint Soil-Structure Interaction under Large Axial Displacement." *Proceedings*: 5th Conference on Geotechnical Earthquake Engineering and Soil Dynamics, Austin, Texas, June 10-13.

[C10] Hasegawa, N., Nakazono, H., **Wham, B.P.**, O'Rourke, T. D. (2017). "Performance Test of Steel Pipe for Crossing Fault in the United States." *Proceedings*: 10th JWWA/WRF/CTWWA Water System Seismic Conference, Tainan, Taiwan, Oct. 18-20. NCREE-17-013.

[C9] Oda, K., Kishi, S., Miyazima, M., Pariya-Ekkasut, C., **Wham, B.P.**, O'Rourke, T. D. (2017). "Verification of Design Method of Pipeline Crossing Fault with Earthquake Resistant Ductile Iron Pipe using Large-scale Split-box Test." *Proceedings*: 10th JWWA/WRF/CTWWA Water System Seismic Conference, Tainan, Taiwan, Oct. 18-20. NCREE-17-013.

[C8] Oettle, N.K., Kayen, R., Franke, K., Dashti, S., **Wham, B.P**., and Ramirez, J. (2017). "Observations and finite element modeling of the Aso Caldera depression zone resulting from the 2016 Kumamoto Earthquake." *Proceedings:* 6th International Young Geotechnical Engineers' Conference (iYGEC6). Seoul, Republic of Korea, Sept. 16-17.

[C7] **Wham, B.P.,** Pariya-Ekkasut, C., Argyrou, C., Lederman, A., O'Rourke, T. D., Stewart, H. (2017). "Experimental Characterization of Hazard-Resilient Ductile Iron Pipe Soil/Structure Interaction under Axial Displacement." *Proceedings*: ASCE Congress on Technical Advancement, Duluth, Minnesota, Sept. 11-13.

[C6] **Wham, B.P.**, Pariya-Ekkasut, C., Argyrou, C., Stack, M., O'Rourke, T.D., Stewart, H.E., Nakazono, H., Hasegawa, N. (2017) "Large Axial Deformation Performance of Steel Pipeline Designed for Fault Crossings." *Proceedings*, ASCE Pipelines Conference, Phoenix, Arizona, Aug. 6-9, Paper ID: 118.

[C5] Kayen, R., Dashti, S., Franke, K., Oettle, N.K., **Wham, B.P.**, Kokusho, T., Hazarika, H., Calderon, J.R. (2017). "Case Histories of Geotechnical Engineering Damage from the M_W 6.0, M_W 6.2, and M_W 7.0 Kumamoto Earthquakes." *Proceedings*, 16th World Conference on Earthquake Engineering, Santiago, Chile, Jan 9-13.

[C4] **Wham, B.P.**, Argyrou, C., O'Rourke, T.D., Stewart, H.E., Bond, T.K. (2015) "PVCO Pipeline Performance Under Large Ground Deformation." *Proceedings*, International Pipeline Geotechnical Conference, Bogota, Columbia, July 16-17, Paper ID: 8508.

[C3] **Wham, B.P.**, Argyrou, C., Bouziou, D., O'Rourke, T.D., Stewart, H.E., Bond, T.K. (2014) "Jointed Pipeline Response to Earthquake Induced Ground Deformation." *Proceedings*, 10th U.S. National Conference on Earthquake Engineering, Anchorage, Alaska, July 21-25, Paper ID: 202.

[C2] Zhong, Z., Bouziou, D., **Wham, B.P.**, Filiatrault, A., Aref, A., O'Rourke, T.D., Stewart, H.E. (2014). "Performance Evaluation of Water Pipelines Retrofitted With Cured In Place Pipe Liner Technology under Transient Earthquake Motions." *Proceedings*, 10th U.S. National Conference on Earthquake, Anchorage, Alaska, July 21-25, Paper ID: 490.

[C1] Bouziou D., **Wham B.P.**, O'Rourke T.D., Stewart H.E., Palmer M.C., Zhong Z., Filiatrault A., Aref A. (2012). "Earthquake Response and Rehabilitation of Critical Lifelines." *Proceedings*, 15th World Conference on Earthquake Engineering, Lisbon, Portugal, Sept. 24-28, Paper No.5111.

Technical Reports & Other Proceedings:

[R21] Kayen, R., **Wham, B.P.,** Grant, A., Atsushi, M., Anderson, D., Zimmaro, P., Wang, P., Tsai, Y.T., Bachhuber, J., Madugo, C., Sun, J., Hitchcock, C., Motto, M. (2019). *Seismological, Geological, and Geotechnical Engineering Aspects of the 2018 MW 6.6 Hokkaido Eastern Iburi Earthquake.* Geotechnical Extreme Event Reconnaissance (GEER) Association. https://doi.org/10.18118/G6CM1K.

[R20] Price, D., Berger, B.A., O'Rourke, T.D., Stewart, H., **Wham, B.P**., Pariya-Ekkasut, C. (2018). *Performance Evaluation of iPVC Pipe under Earthquake-Induced Ground Deformation*, Ithaca, NY: Cornell University.

[R19] Berger, B.A., **Wham, B.P**., O'Rourke, T.D., Stewart, H. (2018). *Direct Tension and Cyclic Testing of JFE SPF Wave Feature*, Ithaca, NY: Cornell University.

[R18] **Wham, B.P**., Berger, B.A., O'Rourke, T.D., Pariya-Ekkasut, C., Stewart, H. (2017). *Performance Evaluation of Bionax SR PVCO Pipeline with Extended Bell Joints under Earthquake-Induced Ground Deformation*, Ithaca, NY: Cornell University.

[R17] **Wham, B.P.**, Dashti, S., Franke, K.W, Kayen, R., Oettle, N.K. (2017). "Water Supply Damage Caused by the 2016 Kumamoto Earthquake." *Proceedings*, International Workshop on the 2016 Kumamoto Earthquake, Kyushu University, Fukuoka, Japan, Mar. 6.

[R16] Oettle, N.K., Kayen, R., Franke, K.W, Dashti, S., **Wham, B.P.** (2017). "Measured Response of the Oh-Kirihata Dam to Surface Fault Rupture." *Proceedings*, International Workshop on the 2016 Kumamoto Earthquake, Kyushu University, Fukuoka, Japan, Mar. 6.

[R15] Kayen, R., Kokusho, T., Hazarika, H., Dashti, S., Calderon, J.R., Franke, K., Oettle, N.K., **Wham, B.P.** (2017). "Geotechnical Extreme-Event Reconnaissance (GEER) Mission to the 2016 M_w 6.0, M_w 6.2, and M_w 7.0 Kumamoto Japan Earthquakes." *Proceedings*, International Workshop on the 2016 Kumamoto Earthquake, Kyushu University, Fukuoka, Japan, Mar. 6.

[R13] Pariya-Ekkasut, C., Berger, B.A. **Wham, B.P.**, Stewart, H.E., O'Rourke, T.D., Bond, T.K. (2017). *Four-Point Bending Testing of 6-in. (150-mm), 12-in. (300-mm), and 16-in. (400-mm)-Diameter Kubota Earthquake Resistant Ductile Iron Pipes.* Ithaca, NY: Cornell University.

[R12] Kayen, R., Dashti, S., Kokusho, T., Hazarika, H., Franke, K., Oettle, N.K., **Wham, B.P.**… Chu, C. (2016). *Geotechnical Aspects of the 2016 M_w 6.2, M_w 6.0, and M_w 7.0 Kumamoto Earthquakes*. Geotechnical Extreme Event Reconnaissance (GEER) Association. https://doi.org/10.18118/G6JS3M.

[R11] **Wham, B.P.**, O'Rourke, T.D., Stewart, H.E., Bond, T.K., Pariya-Ekkasut, C. (2016). *Large-Scale Testing of JFE Steel Pipe Crossing Faults: Testing of SPF Wave Feature to Resist Fault Rupture*. Ithaca, NY: Cornell University.

[R10] Stewart, H.E., Pariya-Ekkasut, C., **Wham, B.P.**, O'Rourke, T.D., Bond, T.K., Argyrou, C. (2016). *American Earthquake Joint System for Resistance to Earthquake-Induced Ground Deformation*. Ithaca, NY: Cornell University.

[R9] Pariya-Ekkasut, C., Stewart, H.E., **Wham, B.P.**, O'Rourke, T.D., Bond, T.K. (2016). *Direct Tension and Split Basin Testing of 6-in. (150-mm) Diameter Kubota Earthquake Resistant Ductile Iron Pipe*. Ithaca: Cornell University.

[R8] Pariya-Ekkasut, C., Stewart, H.E., **Wham, B.P.**, O'Rourke, T.D., Argyrou, C., Bond, T.K. (2016). *Hazard Resilience Evaluation of US Pipe Ductile Iron TR-XTREME^{TM} Joints : 4-16 in. (100-400 mm) Diameter Pipe*. Cornell University.

[R4] Stewart, H.E., O'Rourke, T.D., **Wham, B.P.**, Netravali, A.N., Argyrou, C., Zeng, X., Bond, T.K. (2015). *Performance Testing of Field-Aged Cured-in-Place Liners (CIPL) for Cast Iron Piping*. NYSEARCH/NGA Contract Report. Ithaca: Cornell University.

[*For a current, comprehensive list please refer to https://sites.google.com/site/bradpwham/publications*]

TEACHING & STUDENT ENGAGEMENT

Faculty Advisor, University of Colorado Boulder, CO

- ASCE Student Chapter: Concrete Canoe and Steel Bridge teams *Jan. 2018 - Present*
- EERI Student Chapter and Undergraduate Design Team *Aug. 2018 - Present*

Instructor, Cornell University, Ithaca, NY *August – December 2014*

- Lectured and administered graduate course CEE 6410: Retaining Structures and Slope Stability
- Restructured and updated course to include current practices, ongoing research, and modern case studies
- Integrated two practical design projects: deep excavation design in San Francisco and evaluation of recent slope failure through site visit, soil classification, and analysis software (SLOPE/W)

Graduate Teaching Assistant, Cornell University, Ithaca, NY

CEE 4410/6410 – "Retaining Structures and Slope Stability" *Spring 2012, 2013, 2014*

CEE 3410 – "Introduction to Geotechnical Engineering" *Fall 2011, 2012, 2013*

CEE 4400/6400 – "Foundation Engineering" *Spring 2015*

CEE 6045 – "Underground Technology, Design, and Construction" (Teaching Assistant) *Spring 2015*

CEE 5950 – "Construction Planning and Operations" (Teaching Assistant) *Fall 2012*

ORAL PRESENTATIONS

"CU Boulder Center for Infrastructure, Energy, and Space Testing Research Overview: Drinks, Dynamics, and Disaster-Resilience." ASCE Denver Branch Invited Keynote, Novel Strand Brewery, Denver, CO (Dec. 13, 2018)

"Multi-Hazard Field Reconnaissance: 2018 Hokkaido Eastern Iburi Earthquake and Typhoon Gebi." CU-EERI Seminar, University of Colorado Boulder (Nov. 7, 2018)

"Seismic Experimental Performance Assessment." Workshop on Upcoming Manual of Practice: Seismic Design of Water and Wastewater Pipelines, ASCE Pipelines Conference, Toronto, ON (July 15, 2018)

"Center for Infrastructure, Energy, and Space Testing (CIEST): Experimental Capabilities." Invited Lecture, Symposium on Buried Pipe Research (Testing, Design, & Analysis), Queen's University, Kingston, ON (July 12, 2018)

"Analysis of Buried Pipe Response to Seismic Hazards." Invited Lecture, Symposium on Buried Pipe Research (Testing, Design, & Analysis), Queen's University, Kingston, ON (July 13, 2018)

"Achieving Resilient Water Networks: Experimental Performance Evaluation." 11th U.S. National Conference on Earthquake Engineering, Los Angeles, CA (June 28, 2018)

"Hazard-Resilient Pipeline Joint Soil-Structure Interaction under Large Axial Displacement." 5th Conference on Geotechnical Earthquake Engineering and Soil Dynamics, Austin, TX (June 13, 2018)

"Evaluation of Hazard-Resilient Infrastructure Performance under Large Ground Deformation." Invited Lecture, Rensselaer Polytechnic Institute, Troy, NY (Apr. 18, 2018)

"Performance Evaluation of Hazard-Resilient Pipe under Large Ground Deformation." AWWA Water Infrastructure Conference, Houston, TX (Nov. 1, 2017)

"Seismic Design of Buried Water and Wastewater Pipelines." Co-presenters: Roberts McMullin, Mike Dadik, & Yogesh Prashar. ASCE Congress on Tech. Advancement, Duluth, MN (Sept. 11, 2017)

"Experimental Characterization of Hazard-Resilient Ductile Iron Pipe Soil/Structure Interaction under Axial Displacement." ASCE Congress on Technical Advancement, Duluth, MN (Sept. 11, 2017)

"Large Axial Deformation Performance of Steel Pipeline Designed for Fault Crossings." ASCE Pipelines Conference, Phoenix, AZ (Aug. 8, 2017)

"Overview of 2016 Kumamoto Earthquake Field Reconnaissance: Surveyed Damage, Surface Rupture & Sushi." Department Seminar, Cornell University, Ithaca, NY (March 22, 2017)

"Measured Response of the Oh-Kirihata Dam to Surface Fault Rupture." International Workshop on the 2016 Kumamoto Earthquake, Kyushu University, Fukuoka, Japan (March 6, 2017)

"Water Supply Damage Caused by the 2016 Kumamoto Earthquake." International Workshop on the 2016 Kumamoto Earthquake, Kyushu University, Fukuoka, Japan (March 6, 2017)

"Mechanism of Fluidized Landslides due to 2016 Kumamoto Earthquake and Risk Evaluation of Unstable Soils- A Factual Investigation by Japan-USA Joint Research." Co-presenters: Hazarika Hemanta & Robert Kayen. Japan Science and Technology Agency (JST) J-RAPID Symposium on the 2016 Kumamoto Earthquake, Kumamoto University, Kumamoto, Japan (March 4, 2017)

"Experimental and Numerical Assessment of Hazard-Resilient Underground Infrastructure under Severe Deformation." Geotechnical Engineering Seminar, University of Colorado Boulder (Feb. 18, 2017)

"Critical Underground Infrastructure Response to Large Ground Deformation," Structural Engineering Department Seminar, University of California, San Diego, CA (Sept. 26, 2016)

"Canterbury, New Zealand Earthquake Reconnaissance: Liquefaction, Lateral Spreads, and Lagers," Graduate Student Seminar, Cornell University, Ithaca, NY (Jan. 24, 2015)

"PVCO Pipeline Performance Under Large Ground Deformation," 2nd International Pipeline Geotechnical Conference, Bogota, Columbia (July 16-17, 2015)

"Jointed Pipeline Response to Earthquake-Induced Ground Deformation," 10NCEE and EERI Annual Meeting, Anchorage, AK (July 23, 2014)

Graduate Student Symposium, Cornell University, Ithaca, NY (2013, 2014, 2015)

TECHNICAL SKILLS

- Design and implementation of large-scale laboratory experiments; motivate and guide diverse teams toward project goals; analysis, interpretation, and communication of experimental data
- Nonlinear finite element modeling; three-dimensional solid element; soil-structure interaction
- Proficient with ABAQUS, AutoCAD, LabVIEW, Excel VBA, Mathcad, MATLAB

PROFESSIONAL ACTIVITIES

- Geotechnical Extreme Events Reconnaissance (GEER) – Member

- American Society of Civil Engineers (ASCE) Associate Member (2008 – Present)
  - Co-Faculty Advisor ASCE CU Student Chapter
  - ASCE Manual of Practice for Seismic Design of Water and Wastewater Pipelines – Committee
  - ASCE Infrastructure Resiliency Division – Member
- American Water Works Association (AWWA) – Member
  - AWWA M41 Sub-committee on Seismic Design of Ductile Iron Pipe – Committee Member
- Earthquake Engineering Research Association (EERI) – Member (2011 – Present)
  - Faculty Advisor, EERI CU Student Chapter and Undergraduate Design Team (2018- Present)
  - EERI Younger Members Committee
  - Founder/Former President of EERI Cornell Student Chapter
  - Past-Member of EERI Student Leadership Council (SLC); Career Fair Chair (2013/14)
- Chi Epsilon, National Civil Engineering Honors Society (Fall 2008 – Present)
- Session Chair:
  - "Laboratory Testing." 5th Conf. on Geotechnical Earthquake Engineering and Soil Dynamics
  - "Underground Structures and Lifelines." 11th National Conf. on Earthquake Engineering,
- Reviewer for Computers and Geotechnics, Geotechnique, Canadian Geotechnical Journal, Journal of Natural Hazards, Soil Dynamics and Earthquake Engineering, International Journal of Geoengineering Case Histories, among others

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OTHER ACTIVITIES & ACCOMPLISHMENTS

- Ithaca Youth Hockey Head Coach, Midgets (U18) *2016/2017 Season*
- Cornell Intramural Softball Champions, Captain *Summer 2012, 2013, 2016*
- Golf League Championships *Summer 2013, 2015, 2016*
- Hole-in-One (2) *May 7th 2010 & May 4th 2015*
- Ice Hockey, Snowboarding, & Rock Climbing *Presently*