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Dr. Luis Ibarra is an Associate Professor in the area of structural engineering. His current research includes seismic resilience of systems with special components, such as Buckling Restrained Braces (BRBs); seismic performance of nuclear storage containers; implementation of nonlinear dynamic capabilities in MOOSE software; and probabilistic risk assessment of nuclear components. At the University of Utah he also worked on the seismic resilience of reinforced concrete frames with high strength materials, collapse capacity of frame structures, and machine learning algorithms in seismic structural engineering, among other studies. Prior to joining the U of U, Dr. Ibarra worked at Southwest Research Institute (SwRI), where he used finite element simulations and experimental tests to evaluate the mechanical response of engineered barriers for high-level radioactive waste. He also evaluated seismic risk assessment methodologies for application in nuclear facilities, assessing the effects of deterioration on aging concrete components. During his Ph.D. studies at Stanford University, he developed deteriorating hysteretic models for nonlinear time history analysis that are widely used in platforms, such as OpenSees and SeismoSoft. Dr. Ibarra has designed concrete and steel buildings, factories, and urban structural facilities. Dr. Ibarra is a registered professional engineer in Texas.

EDUCATION ----------

Doctor of Philosophy. Civil and Environmental Engineering, 2004. Stanford University. Advisor: Prof. Helmut Krawinkler.

Master of Engineering. Structural Engineering (with Honors), 1999. National Autonomous University of Mexico. Advisor: Prof. Neftali Rodriguez.

Bachelor of Science. Civil Engineering (with Honors), 1992. University of Sonora, Mexico. Advisor: Prof. Qutberto Acuna.

APPOINTMENTS ----------

Associate Professor, Department of Civil and Environmental Engineering, University of Utah (U of U), Salt Lake City, Utah; July 2016-Present.

Visiting Professor, Technical University of Vienna, Austria; October 2017 – June 2018.

Visiting Researcher, Nagoya University, Japan; May 2017 – June 2017.

Assistant Professor, Department of Civil and Environmental Engineering, University of Utah (U of U), Salt Lake City, Utah; August 2010-June 2016.

Consultant, Salt Lake City, Utah; June 2011 – May 2013.

Senior Research Engineer, Center for Nuclear Waste Regulatory Analyses (CNWRA) in Southwest Research Institute (SwRI), San Antonio, TX, January 2004 – July 2010.

Consultant, Mexico City, Mexico; September 1996 – February 1998.

Structural Engineer, IMPSA and Grupo Puebla, Mexico; August 1992 – July 1996.

Resident Engineer, Inmobiliaria del Pitic and VRACCO, Mexico; Jan 1991 – July 1992.

RESEARCH EXPERIENCE ----------

Research Citations

According to Google Scholar my scientific publications have been cited 4106 times in total, as of March 10, 2022.

1) University of Utah.

My current areas of study at the U of U include seismic performance of nuclear storage containers, experimental study on the effect of boundary conditions on the seismic performance of Buckling Restrained Brace (BRB) frames, testing of prototype BRB components, implementation of nonlinear mechanical modeling in BISON, and probabilistic risk assessment of spent nuclear fuel rods. In recent years I worked on an experimental study on the seismic resilience of reinforced concrete frames with high strength materials, collapse capacity evaluation of frame structures, and seismic behavior of skewed bridges retrofitted with BRBs. In 2013, I was the recipient of the AISC Milek Fellowship. Table 1 summarizes the projects I have been involved since joining the University of Utah.

Table 1. Research Projects at the University of Utah

Project Title	Funding Source	Funding *	Time Period	Principal Investigators †
Seismic resilience of high strength FRC frames	U of Utah	$107,000	02/11–12/15	Ibarra (PI)
Cast connector experimental Test	Adan Eng.	$29,898	02/12 – 12/12	Ibarra (PI)
Effects of Screen Machines on the Dynamic Response of Steel Frame Buildings	Millcreek Engineers	- ‡	06/12 – 03/13	Ibarra (PI)
Seismic evaluation of NGNPs	U of U, SEED	$66,700	07/12 – 12/13	Ibarra (PI)
Seismic Performance of Dry Cask Storage	NEUP	$873,300	01/13 – 01/16	Ibarra (PI), Sanders, Yang, Pantelides
Effect of BRB Boundary Conditions on the Seismic Resilience of Braced Frames	AISC	$120,000	09/13 – 08/17	Ibarra (PI)

Seismic performance of Concrete-filled Steel Tube (CFST) columns for Accelerated Bridge Construction (ABC)	Mountain-Plains Consortium	$17,732	10/12 – 12/13	Ibarra (PI)
Effect of Epistemic Uncertainties on Collapse Capacity Spectra.	University of Innsbruck	- ‖	03/13 – 05/14	Adam (PI), Ibarra
Testing a New Generation of Star Seismic LLC BRBs	Star Seismic	$41,927	06/13 – 12/14	Pantelides (PI), Ibarra
Seismic behavior of Skewed and Curved RC Girder Bridges Using BRBs	MPC	$50,940	10/13 – 12/16	Pantelides (PI), Ibarra
Risk Assessment of Structural Integrity of Transportation Casks after Extended Storage.	NEUP	$740,296	02/14 – 12/17	Ibarra (PI), Medina, Yang, Coleman
US-Japan Collaboration on Testing of 10-story RC Frame (only travel budget)	NSF	$11,200	09/15 – 12/20	Ibarra, Moehle (PI)
Expanding BISON Capabilities to Predict the Dynamic Response	NEUP	$297,000	10/17– 09/20	Ibarra, Medina (PI), Coleman
Experimental Tests of Rod Buckling Restrained Braces	Ridgeline Technology	$26,000	08/19 – 06/20	Ibarra (PI)
Expanding BISON Capabilities to Predict the Dynamic Response (extension)	NEUP	$148,555	08/19 – 09/21	Ibarra
Using Machine Learning to Predict Structural Collapse of Bldgs. under Extreme Seismic Events	NSF	$395,216	09/21– 08/24	Ibarra
Effect of Vertical Acc. on the Seismic Performance of Steel Building Components.	NSF	$210,000	04/24– 03/26	Ibarra
	Total	$3,135,764		

* The funding amount corresponds to the total project budget, if Ibarra is the PI. Otherwise it is the funding assigned to Ibarra.
‡ Millcreek Engineers LLC funded the MS student working on the project.
‖ The University of Innsbruck funded the Ph.D. student.
† Main collaborators: Prof. D. Sanders (UNR and ISU), Prof. C. Pantelides (U of U), Prof. H. Yang (Oregon State University), Prof. Christoph Adam (University of Innsbruck), Dr. Ricardo Medina (SGH), Prof. Jack Moehle (UCB), and Justin Coleman (Idaho National Laboratory)

Pending Research Proposals:
"Nondestructive Examination of Silicon Carbide Composite Claddings using Laser Ultrasound and Zero-Group Velocity Modes." Submitted to NEUP in February 2023.

Laboratory Equipment. In 2012, we obtained $42,664 from the U of U College of Engineering Base Engineering Equipment Fund (BEEF) to renew the Structures/Materials Laboratory. The CvEEN department matched 50% of this amount ($21,332). The funding was used to refurbish our educational shake table system, ($16,000), acquire a forklift for the structures laboratory, and other minor equipment.

2) Southwest Research Institute:

- Evaluation of seismic design and performance methodologies for nuclear facilities
- Studies of nonlinear mechanical interaction of different alloy materials under static and dynamic loading
- Structural assessment of nuclear engineered barriers under seismic loading
- Study of coupled mechanisms in nuclear-waste containers
- Structural evaluation of independent spent fuel storage installation (ISFSI)
- Evaluation of the effect of aging of concrete on seismic performance of reinforced concrete structures

Principal investigator of the following projects:

- Mechanical Disruption of Engineered Barriers for a potential nuclear waste repository (approximately $700,000 per year from 2005 to 2010). NRC funding.
- Effect of aging of concrete on seismic performance of reinforced concrete components used in nuclear facilities (approximately $190,000). SwRI IR&D funding.

3) Stanford University (Research Assistant):

- Global collapse evaluation of frame structures subjected to extreme seismic demands.
- Development of deteriorating hysteretic models for nonlinear time history analysis that include the most important sources of strength and stiffness deterioration.
- Development of a wood loading protocol for representative earthquakes of California.

4) National Autonomous University of Mexico (Research Assistant):

- System identification studies on buildings to obtain the dynamic properties of existing structures, and predict the structural response of the soil-structure system.
- Study of reinforced concrete buildings with flat slabs under earthquake excitations.

SCHOLARY PUBLICATIONS----------

Journal Articles

1. Neupane H, Ibarra L (2022) “Development of a spring model to predict the behavior of fuel rods in a spacer grid assembly.” Journal Nuclear Engineering and Design, Vol. 394, 2022/8/1, Publisher North-Holland.
2. Hongkai D, Y Wang, M Han, LF Ibarra (2021) “Experimental seismic performance of a base-isolated building with displacement limiters.” Engineering Structures. Vol. 244, October 2021. 10.1016/j.engstruct.2021.112811.
3. Parks JE, CP. Pantelides, L Ibarra, DH Sanders (2020) “Cyclic Tests and Modeling of Stretch Length Anchor Bolt Assemblies for Dry Storage Casks.” ACI Structural Journal, V. 117, No. 6, November 2020.
4. Wang Y, L Ibarra, CP Pantelides (2020) “Effect of incidence angle on the seismic performance of skewed bridges retrofitted with buckling-restrained braces. Engineering Structures. Vol. 211. May 2020.
5. Eidelpes E., L.F. Ibarra, R.A. Medina (2020) “Eidelpes E., L.F. Ibarra, R.A. Medina (2020) “A probabilistic assessment of PWR SNF cladding pinching failure considering potential transportation accident conditions.” Nuclear Engineering and Design. Vol. 358. March, 2020.
6. Uribe R., S. Sattar, M.S. Speicher, L. Ibarra (2019) “Effect of Common U.S. Ground Motion Selection Methods on the Structural Response of Steel Moment. Spectra Journal. Volume 35, No. 4, pages 1611–1635, November 2019.
7. Upadhyay A, CP Pantelides, L Ibarra (2019) ‘‘Residual drift mitigation for bridges retrofitted with buckling restrained braces or self-centering energy dissipation devices.” Engineering Structures, https://doi.org/10.1016/j.engstruct.2019.109663.
8. Wang Y, L Ibarra, C. Pantelides (2019) “Collapse capacity of reinforced concrete skewed bridges retrofitted with buckling-restrained braces.” Journal of Engineering Structures. https://doi.org/10.1016/j.engstruct.2019.01.033.
9. Eidelpes E., L.F. Ibarra, R.A. Medina (2019) “Probabilistic Assessment of Peak Cladding Hoop Stress and Hydrogen Content of PWR SNF Rod Cladding.” Nuclear Technology 2019. American Nuclear Society. DOI: https://doi.org/10.1080/00295450.2019.1575127.
10. Eidelpes E., L.F. Ibarra, R.A. Medina (2019) “A Probabilistic Assessment of PWR SNF Pinching Failure Considering Hydride-related Cladding Embrittlement.” Nuclear Engineering and Design, Vol. 351. doi: 10.1016/j.nucengdes.2019.05.024.
11. Parks JE, CP. Pantelides, L Ibarra, DH Sanders (2018) “Stretch Length Anchor Bolts under Combined Tension and Shear.” American Concrete Institute, ACI. September 2018.
12. Eidelpes E., L.F. Ibarra, R.A. Medina (2018) “Ring compression tests on un-irradiated nuclear fuel rod cladding considering fuel pellet support.” Journal of Nuclear Materials, Vol. 510, November 2018, p. 446-459.
13. Adam C, D Kampenhuber, and LF Ibarra (2017) “Optimal Intensity Measure based on Spectral Acceleration for Pdelta Vulnerable Deteriorating Frame Structures in the Collapse Limit State.” Bulletin of Earthquake Engineering. October 2017, Volume 15, Issue 10, pp 4349–4373.

14. Tsantaki, S., Adam, C. & Ibarra, L.F. (2017) “Intensity measures that reduce collapse capacity dispersion of P-delta vulnerable simple systems”. Bulletin of Earthquake Engineering, March 2017, Vol. 15, Issue 3, pp. 1085-1109. doi:10.1007/s10518-016-9994-4.
15. Adam C, D Kampenhuber, LF Ibarra, Tsantaki, S (2017) “Optimal Spectral Acceleration-based Intensity Measure for Seismic Collapse Assessment of P-Delta Vulnerable Frame Structures.” Journal of Earthquake Engineering. Vol. 21, 2017. Issue 7, pp. 1189-1195. https://doi.org/10.1080/13632469.2016.1210059.
16. Wang Y, L Ibarra, and C Pantelides (2016) “Seismic Retrofit of a Three Span Bridge with Buckling Restrained Braces.” ASCE Journal of Bridge Engineering, 04016073. May 2016.
17. Ibarra L and B Bishaw (2016) “High Strength Fiber Reinforced Concrete Beam-Columns with High Strength Steel.” January 2016. ACI Structural Journal. 10.14359/51688066. Vol. 113, Issue 1, pp.147-156.
18. Tucker C and L Ibarra (2016) “Effects of Partial Design Strength Concrete on the Seismic Performance of Concrete Filled Tube Columns in Accelerated Bridge Construction.” ASCE Journal of Bridge Engineering 21(6):04016023. February 2016. DOI: 10.1061/(ASCE) BE.1943-5592.0000812.
19. Tsantaki S, LF Ibarra, C Adam (2015) “Effect of P-delta uncertainty on the seismic collapse capacity and its variability of single-degree-of freedom systems.” Bulletin of Earthquake Engineering 13 (4), 1205-1225.
20. Hasanbas E, L Ibarra (2015) “Effects of Screen Machines on the Structural Dynamic Response of Steel Frame Buildings.” ASCE Journal of Performance of Constructed Facilities. March 2015.
21. Yang L, K-T Chiang, H Yu, R. T. Pabalan, B. Dasgupta, L. Ibarra (2014) “Threshold Chloride Levels for Localized Carbon Steel Corrosion in Simulated Concrete Pore Solutions Using Coupled Multielectrode Array Sensors.” CORROSION. 2014;70(8):850-857.
22. Ibarra L, B Dasgupta B, K-T Chiang (2012) “Seismic Performance of Degraded Shear Wall Structures for Long-Term Compliance Periods.” Journal of Disaster Research. Vol.7, No.5, pp. 638-644, 2012.
23. Ibarra L, H Krawinkler (2011) “Variance of Collapse Capacity of SDOF Systems under Earthquake Excitations.” Earthquake Engineering and Structural Dynamics Journal. Volume 40, Issue 12, pages 1299–1314, October 2011.
24. Zareian F, H Krawinkler, L Ibarra, D Lignos (2010) “Basic Concepts and Performance Measures in Prediction of Collapse of Buildings under Earthquake Ground Motions.” The Structural Design of Tall and Special Buildings Journal.
25. Krawinkler H, F Zareian, RA Medina, L Ibarra (2005) “Decision Support for Conceptual Performance-Based Design.” Earthquake Engineering and Structural Dynamics, Vol. 35, January 2006, pp. 115-133.
26. Nagae T, S Hayashi, LF Ibarra, H Krawinkler (2005) “Influences of Mechanism Control for Reinforced Concrete Frame Structures on Processes of Damage and Probabilities of Collapse”. Journal of Structural and Construction Engineering. Issue 593, pp. 121-128. 2005.
27. Ibarra L, RA Medina, H Krawinkler (2005) “Hysteretic Models that Incorporate Cyclic Strength Deterioration and Stiffness Degradation.” Earthquake Engineering and Structural Dynamics, Vol. 34, October 2005, pp. 1489-1511.

Journal Articles (under review)

Journal Articles (in preparation)

1. Wong C., L Ibarra (2022) “Baseline correction method”. To be submitted to Engineering Structures.
2. Dangol S, L Ibarra (2022) “Seismic Response of Cylindrical Dry Storage Casks.” To be submitted to Engineering Structures.
3. P Dhakal, C Tucker, L Ibarra (2022) “BRBF tests to evaluate the effect of boundary conditions on ultimate capacity.”
4. Ibarra L, B Birhanu (2021) “Seismic Collapse Capacity of Moment Resisting Frames using High Strength Fiber Reinforced Concrete Components.”
5. Ramasamy U, L Ibarra, R Medina (2021) “Buckling behavior of spent nuclear fuel rods under impact loading.” To be submitted to Nuclear Engineering and Design.

Journal Articles (research collaboration)

1. Liu, J (2015) “Collapse capacity of braced frames.” AISC EJ Current Steel Structures Research – To be published in the 4th Quarter 2015.

Book Chapters and Research Reports

1. Aguilar-Meléndez A, L Pujades, J De La Puente, AH Barbat, MG Ordaz, SN González, CM Welsh, HE Rodriguez, N Lantada, L Ibarra, A García, A Campos (2018) “Probabilistic Assessment of Seismic Risk of Dwelling Buildings of Barcelona. Implications for the City Resilience.” Published in “Urban Resilience for Risk and Adaptation Governance Theory and Practice.” by G Brunetta, O Caldarice, J Morato, M Rosas, N Tollin. June 2018.
2. Adam C. L Ibarra (2014) “Seismic Collapse Assessment.” Book Chapter on Seismic Risk Assessment. Editors F. and C. Galasso. Encyclopedia of Earthquake Engineering – Ed. Springer.
3. Krawinkler H, F Zareian, DG Lignos, LF Ibarra (2010) “Significance of Modeling Deterioration in Structural Components for Predicting the Collapse Potential of Structures under Earthquake Excitations.” In M. Fardis (Ed.), Performance-Based Earthquake Engineering. Ed. Springer.

Research Reports

1. Tucker C and L Ibarra (2019) “Seismic Performance of Circular Concrete Filled Steel Tube Columns for Accelerated Bridge Construction.” Mountain-Plains Consortium, Report MPC 19-383. July 2019.
2. Uribe R, S Sattar, MS Speicher, L Ibarra (2018) “Impact of Ground Motion Selection Methods on the Seismic Assessment of Steel Special Moment Frames”. Technical Note (NIST TN)-1992.
3. Ibarra (2018) “Risk Assessment of Structural Integrity of Transportation Casks after Extended Storage - Aging Effect on the Cask Components Mechanical Performance-.” Final Report to NEUP. March 2018.

4. Ibarra (2016) “Seismic Performance of Dry Casks Storage for Long-Term Exposure.” Final Report to NEUP. December 2016.
5. Ofoegbu GI, R Fedors, C Grossman, S Hsiung, L Ibarra, C Manepally, J Myers, M Nataraja, O Pensado, K Smart, D Wyrick (2006) “Summary of Current Understanding of Drift Degradation and its Effect on Performance at a Potential Yucca Mountain Repository.” CNWRA 2006-02. San Antonio, TX: CNWRA. 2006.
6. Ibarra LF, H Krawinkler (2005) “Global Collapse of Frame Structures under Seismic Excitations.” Pacific Earthquake Engineering Research (PEER) Report 2005/06, PEER Center, University of California, Berkeley, September 2005.
7. Ibarra LF, Krawinkler H (2005) “Global collapse of frame structures under seismic excitations.” Report No. 152, The John A. Blume Earthquake Engineering Research Center, Department of Civil and Environmental Engineering, Stanford University, Stanford, CA, 2005.
8. Krawinkler H, F Zareian, L Ibarra, R Medina, S Lee (2003) “Seismic Demands for Single- and Multi-story Wood Buildings.” Project CUREE/Caltech Woodframe, CUREE Publication W-26, 2003.
9. Krawinkler H, F Parisi, L Ibarra, A Ayoub, R Medina (2001) “Development of a Testing Protocol for Woodframe Structures.” Project CUREE/Caltech Woodframe, CUREE Publication W-02, 2001.
10. Ibarra L (1999) “Comportamiento Dinámico de un Edificio con Sistema de Losa Plana, Abacos y Capiteles.” Master Thesis, UNAM, Mexico, in Spanish.

Refereed Conference Articles

1. Ibarra L, Zargar S, RA Medina (2022) “Buckling Capacity of Nuclear Fuel Rods.” 4th International Conference on Nuclear Power Plants; Structures, Risk, Control & Decommissioning. NUPP 2022 Proceedings. 19-20 September 2022.
2. Wong C, L Ibarra (2022) “A Comprehensive Type-oriented Algorithm for Baseline Correction of Acceleration Time Histories.” 12th National Conference on Earthquake Engineering, Salt Lake City, UT. June 2022.
3. Dhakal P, L Ibarra (2022) “Effect of Cruciform Lug Stiffeners on the Seismic Performance of Buckling Restrained Braced Frames.” 12th National Conference on Earthquake Engineering, Salt Lake City, UT. June 2022.
4. Eidelpes E, L Ibarra, R Medina (2019) “A Probabilistic Assessment of PWR SNF Rod Pinching Failure Considering Hydride-Related Cladding Embrittlement.” SMiRT 25. Charlotte, NC, USA, August 4-9, 2019.
5. Eidelpes E, L Ibarra, R Medina (2019) “PWR SNF rod stiffness and cladding behavior under pinching loading.” SMiRT 25. Charlotte, NC, USA, August 4-9, 2019.
6. Zargar S, R Medina, L Ibarra (2019) “Numerical Evaluation of Pinching Forces Experienced by Fuel Rods at Different Drop Orientation Angles.” SMiRT 25. Charlotte, NC, USA, August 4-9, 2019.
7. Ibarra L, S Dangol, C Pantelides (2019) “Lack of Repeatability on the Response of Free-Standing Cylindrical Casks.” ASCE EMI. June 2019.
8. Wang Y, L Ibarra, C Pantelides (2018) “Collapse Capacity Assessment of Retrofitted Skewed Bridges with Buckling Restrained Braces.” 11th U.S. National Conference on Earthquake Engineering. Integrating Science, Engineering & Policy June 25-29, 2018. Los Angeles, California.

9. Dangol S, L. Ibarra, S. Bartlett, C. Pantelides, D. Sanders (2018) “Soil effects on the response of free-standing dry storage casks.” 16th European Conference on Earthquake Engineering, Thessaloniki, Greece. 18-21 June 2018.
10. Wang Y, L Ibarra, C Pantelides (2018) “Collapse capacity assessment of skewed reinforced concrete box girder bridges retrofitted with buckling restrained braces.” 16th Earthquake European Conference on Earthquake Engineering, Thessaloniki, Greece. 18-21 June 2018.
11. Yenidogan C., R. Yokoyama, T. Nagae, K. Kajiwara, L. Ibarra (2018) “Performance Assessment of a Four Story RC Structure through Full-Scale Shake Table Test and the Reproduction of Analysis Results.” 16th Earthquake European Conference on Earthquake Engineering, Thessaloniki, Greece. 18-21 June 2018.
12. Eidelpes E, LF Ibarra, RA Medina (2017) “Pinching Capacity of Zircaloy Spent Nuclear Fuel Cladding.” SMiRT-24 BEXCO, Division VII. Paper 391. Busan, Korea. August 20-25, 2017.
13. Eidelpes E, LF Ibarra, RA Medina (2017) “PRA – Structural Integrity of SNF Transportation Casks after Long-Term Storage.” Proceedings of the 16th International High-Level Radioactive Waste Management Conference, IHLRWM 2017. Charlotte, NC, April 9-13, 2017.
14. Zargar, S., Medina, R., Ibarra, L. (2017) “Effect of Pellet-Cladding Bonding on Surrogate Copper Rod”, Proceedings of the 16th International High-Level Radioactive Waste Management Conference, IHLRWM 2017. Charlotte, NC, April 9-13, 2017.
15. Wang Y, L Ibarra, C Pantelides (2017) “Seismic Assessment for Retrofitted Skewed Reinforced Concrete Bridges with Buckling Restrained Braces.” 16th World Conference on Earthquake Engineering, ID. 2531. Santiago, Chile, January 9-13, 2017.
16. Adam C, D Kampenhuber, LF Ibarra (2017) “A Spectral Acceleration Based Intensity Measure for P-delta Vulnerable Frames in the Collapse Limit State.” 16th World Conference on Earthquake Engineering, ID. 235. Santiago, Chile, January 9-13, 2017.
17. Uribe R, S. Sattar, MS Speicher, L Ibarra (2017) “Influence of Ground Motion Selection on the Assessment of Steel Special Moment Frames.” 16th World Conference on Earthquake Engineering, ID 2410. Santiago, Chile, January 9-13, 2017.
18. Bishaw B and L Ibarra (2017) “Effect of High Strength Steel on the Flexural Behavior of High Strength Concrete and Fiber-Reinforced Concrete Specimens,” 16th World Conference on Earthquake Engineering, ID. 4899. Santiago, Chile, January 9-13, 2017.
19. Maree, A, T Nielsen, S Dangol, J Parks, D Sanders, L Ibarra and C Pantelides (2017) “Modeling Sliding and Rocking of Free Standing Dry Storage Casks under Earthquake Excitation,” 16th World Conference on Earthquake Engineering, Santiago, Chile, January 9-13, 2017
20. Dangol, S, A Maree, T Nielsen, J Parks, L Ibarra D Sanders, and C Pantelides (2017) “Experimental Dynamic Response of Free-Standing Bodies under Near Field and Far Field Ground Motions,” 16th World Conference on Earthquake Engineering, Santiago, Chile, January 9-13, 2017, Submission ID: 2831.
21. Parks, J., A Maree, T Nielsen, C Pantelides, L Ibarra, D Sanders (2017) “Seismic Anchorage of Dry Storage Casks,” 16th World Conference on Earthquake Engineering, Santiago, Chile, January 9-13, 2017, Submission ID: 2205
22. Wong KK, SL McCabe, R Uribe, S Sattar, MS Speicher, L Ibarra (2017) “Reliability Of Plastic Rotation Calculations For Damage Assessment Of Moment-Resisting

Framed Structures." 16th World Conference on Earthquake Engineering, Santiago, Chile, January 9-13, 2017.

23. Zargar S, RA Medina, L Ibarra, and J Coleman (2015) "Numerical and experimental assessment of fuel rods exposed to vibration loads during transportation." Structural Mechanics in Reactor Technology, SMiRT 23rd. April 2015.
24. Ramasamy U, R Medina, J Coleman, and L Ibarra (2015) "Buckling Behavior of Spent Nuclear Fuel Rods under Impact Loading." Structural Mechanics in Reactor Technology, SMiRT 23rd. April 2015.
25. Parks JE, CP Pantelides, L Ibarra, and D Sanders (2015) "Seismic Anchorage of Dry Storage Casks." Structural Mechanics in Reactor Technology, SMiRT 23rd. April 2015.
26. Wang Y and L Ibarra (2015) "Optimization of Modified Base-isolated Systems for Next Generation Nuclear Structures." Structural Mechanics in Reactor Technology, SMiRT 23rd. April 2015.
27. Tucker C, L Ibarra (2014) "Seismic Performance of Concrete Filled Steel Tube (CFST) Bridge Columns for Accelerated Bridge Construction." Tenth U.S. National Conference on Earthquake Engineering. July 21-25, 2014. Anchorage Alaska.
28. Bishaw B, L Ibarra (2014) "Evaluating Collapse Capacity of Moment Resisting Frames that use High Strength Fiber Reinforced Concrete." Tenth U.S. National Conference on Earthquake Engineering. July 21-25, 2014. Anchorage Alaska.
29. Adam C, S Tsantaki, LF Ibarra and D Kampenhuber (2014) "Record-to-record variability of the collapse capacity of multi-story frame structures vulnerable to p-delta." 15th European Conference on Earthquake Engineering. Aug 22-24, 2014. Instambul, Turkey.
30. Dangol S, L Ibarra (2013) "Effect of Vertical Accelerations on Dry Storage Cask Seismic Performance." 22nd International Conference on Structural Mechanics in Reactor Technology, SMiRT 22, San Francisco, CA. August 2013.
31. Sarmady H, L Ibarra (2013) "Seismic Response of New Generation Plants with Base Isolators to Horizontal and Vertical Accelerations." 22nd International Conference on Structural Mechanics in Reactor Technology, SMiRT 22, San Francisco, CA. August 2013.
32. Myers A, L Ibarra, A Kanvinde (2012) "Maximum Likelihood Based Parameter Estimation of Cyclic Constitutive Models for Earthquake Engineering Simulation." 15th World Conference on Earthquake Engineering. Lisbon, Portugal. September 2012.
33. Bishaw B, L Ibarra (2012) "Optimization of High Strength Fiber Reinforced Concrete with Durability Characteristics for Seismic Applications." 15th World Conference on Earthquake Engineering. Lisbon, Portugal. September 2012.
34. Yang L, K-T Chiang, H Yu, RT Pabalan, B. Dasgupta, L Ibarra (2012) "Studies of Threshold Chloride Levels for Localized Carbon Steel Corrosion in Simulated Concrete Pore Solutions Using Coupled Multielectrode Array Sensors." Proceedings of CORROSION 2012 Conference. Salt Lake City, UT. March 2012.
35. Ibarra L, B Dasgupta (2011) "Effect of Aging Concrete on Seismic Performance of Shear Wall Structures." 21st International Conference on Structural Mechanics in Reactor Technology, SMiRT 21, Paper 544. November 2011, New Delhi, India.
36. Chiang K, L Ibarra, B Dasgupta (2011) "Effect of Temperature on the Compressive Strength of Concrete." 21st International Conference on Structural Mechanics in Reactor Technology, SMiRT 21, Paper 546. November 2011, New Delhi, India.
37. Krawinkler H, F Zareian, DG Lignos, LF Ibarra (2009) "Prediction of collapse of structures under earthquake excitations. Proceedings of the 2nd International

Conference on Computational Methods in Structural Dynamics and Earthquake Engineering (COMPDYN 2009), Rhodes, Greece, CD-ROM paper, paper no. CD449

38. Zareian F, H Krawinkler, DG Lignos, LF Ibarra (2008) “Predicting Collapse of Frame and Wall Structures.” Proceedings of the 14th World Conference on Earthquake Engineering, Beijing, China. Paper S24-006. October, 2008.
39. Ibarra L, A Chowdhury (2006) "Inelastic Absorption Energy Factors for Short Period Deteriorating SDOF Systems." Proceedings of the First European Conference on Earthquake Engineering and Seismology, September 2006, Geneva, Switzerland.
40. Zareian F, H Krawinkler, LF Ibarra (2006) “Why and How to Predict the Probability of Collapse in Buildings.” Proceedings of the 8th National Conference on Earthquake Engineering, San Francisco, California, April 2006.
41. Ibarra L, H Krawinkler (2005) “Effect of Uncertainty in System Deterioration Parameters on the Variance of Collapse Capacity.” Proceedings of the Ninth International Conference on Structural Safety and Reliability, ICOSSAR, Paper 107, June 19-23, 2005, Rome, Italy.
42. Ibarra L, H Krawinkler (2004) “Global Collapse of Deteriorating MDOF Systems.” Proceedings of the 13th World Conference on Earthquake Engineering, Canada 2004, Paper No. 116.
43. Zareian F, LF Ibarra, Krawinkler H (2004) “Seismic Demands and Capacities of Single-Story and Low-Rise Multi-Story Woodframe Structures.” Proceedings of the 13th World Conference on Earthquake Engineering, Paper No. 2144.
44. Adam C, LF Ibarra, H Krawinkler (2004) “Evaluation of P-Delta Effects in Non-Deteriorating MDOF Structures from Equivalent SDOF Systems.” Proceedings of the 13th World Conference on Earthquake Engineering, Paper No. 3407.
45. Ibarra L, R Medina, H Krawinkler (2002) “Collapse Assessment of Deteriorating SDOF Systems.” Proceedings of the 12th European Conference on Earthquake Engineering, London, England, Paper 665, September 2002.

Non-Refereed Conference Articles

1. Eidelpes E, L Ibarra, R Medina (2019) “Probabilistic Investigations on Pinching Failure of PWR SNF Rods Considering Hydride-Related Cladding Embrittlement.” International High-Level Radioactive Waste Management (IHLRWM) Conference, April 14-18, 2019, Knoxville, TN.
2. Zargar S, RA Medina, L Ibarra (2019) “Numerical Evaluation of Pinching Forces Experienced by Fuel Rods at Different Drop Orientation Angles. International High-Level Radioactive Waste Management (IHLRWM) Conference, April 14-18, 2019, Knoxville, TN.
3. Eidelpes E, L Ibarra, S Zargar, RA Medina (2018) “Probabilistic Risk Assessment of the Structural Integrity of SNF Transportation Casks after Long-Term Storage.” 2nd International Conference on Nuclear Power Plants: Structures, Risk & Decommissioning - 11-12 June 2018, London.
4. Eidelpes E, L Ibarra, RA Medina (2018) “Ring Compression Tests on Un-Irradiated Zircaloy-4 Cladding Considering Fuel Pellets.” 2nd International Conference on Nuclear Power Plants: Structures, Risk & Decommissioning - 11-12 June 2018, London
5. Wang Y, L Ibarra, C Pantelides (2017) “Effects of Ground Motion Incidence Angle in Reinforced Concrete Skewed Bridge Retrofitted with Bucking Restrained

Braces." Structures Congress 2017, Paper 1457. Denver Colorado, April 6-8, 2017.
6. Parks J, C Pantelides, L Ibarra, D Sanders (2017) "Seismic Anchorage of Dry Storage Casks using Stretch Length Anchors." Structures Congress 2017, Paper 853. Denver Colorado, April 6-8, 2017.
7. Parks J, C Pantelides, L Ibarra, D Sanders (2016) "Seismic Anchorage of Dry Storage Casks." Radwaste Solutions. ANS. High-Level Waste Management. Spring 2016, pp. 41-47.
8. Maree, A., T Nielsen, D Sanders, S Dangol, J Parks, L Ibarra, and C Pantelides (2016) "Impact of Slenderness on Dry Storage Cask Seismic Response", Waste Management Symposia 2016 in Phoenix, Arizona, March 6-10, 2016.
9. Dangol, S., L Ibarra, A. Maree, T Nielsen, D Sanders, and C Pantelides (2016) "Experimental Seismic Response of Scaled Storage Containments under Identical Loading Conditions," Waste Management Symposia 2016 in Phoenix, Arizona, March 6-10, 2016.
10. Zargar S, RA Medina, L Ibarra (2015) "Experimental Modal Analysis and Static Testing for Numerical Validation of Unirradiated Fuel Rods." American Nuclear Society, 2015 ANS Winter Meeting. Paper 15438.
11. Parks J, C Pantelides, L Ibarra (2015) "Seismic Anchorage of Dry Storage Casks". American Nuclear Society, 2015 ANS Winter Meeting.
12. Maree AF, TM Nielsen, S Dangol, J Parks, DH Sanders, LF Ibarra, CP Pantelides (2015) "Shaking Table Experiments of Dry Storage Casks." 6th International Conference on Advances in Experimental Structural Engineering. August 1-2, 2015, University of Illinois, Urbana-Champaign, USA.
13. Tsantaki S, C Adam, D Kampenhuber, LF Ibarra (2015) "Record-To-Record Dispersion of Seismic Collapse Capacity Based on Different Intensity Measures." ECED 2015 Conference: Earthquake Risk and Engineering towards a Resilient World. 9-10 July 2015, Cambridge UK
14. Adam, C., Ibarra, L.F., Tsantaki, S (2014) "Uncertainty of the collapse capacity of earthquake excited simple structures vulnerable to the P-delta effect." In: Proc. 8th European Nonlinear Dynamics Conference (ENOC 2014), 6-11 July 2014, Vienna, Austria (Ecker, H., Steindl, A., Jakubek, S., eds), CD-ROM volume (ISBN: 978-3-200-03433-4), paper no. 257, 6 pp., 2014
15. Adam C, L Ibarra, Tsantaki S (2014) "Uncertainty of the collapse capacity of earthquake excited simple structures vulnerable to the P-delta effect." 8th European Nonlinear Dynamics Conference. July 6-11, 2014, Vienna, Austria.
16. Ibarra L, Bishaw B (2013) "Application of a Collapse Capacity Methodology to Moment Resisting Frames with High Strength Materials." 19th National Mexican Congress of Seismic Engineering. Veracruz, Mex.
17. Tsantaki S, L Ibarra, C Adam (2013) "Effect of Aleatory and Epistemic Uncertainties on Collapse Capacity Spectra." VEESD Conference. Vienna, Austria. 2013.
18. Krawinkler H, F Zareian, D Lignos, L Ibarra (2009) "Prediction of Collapse of Structures under Earthquake Excitations." Second International Conference on Computational Methods and Structural Dynamics (CompDyn) 2009. Greece 2009.
19. Nagae T, S Hayashi, LF Ibarra, H Krawinkler (2006) "Damage Progress and Collapse Capacity of RC Frame Structure: - From the Viewpoints of Mechanism Control -. A paper for Tokyo Institute of Technology's Conference.
20. Kazban RV, LF Ibarra (2008) "Effect of Parameter Variations on the Structural Response of the Drip Shield — An Engineered Barrier of a Potential Geologic

Repository." IMAC-XXVI: A Conference & Exposition on Structural Dynamics, Orlando, Florida, February 2008.
21. Krawinkler H, F Zareian, RA Medina, L Ibarra (2004) "Contrasting Performance-Based Design with Performance Assessment." International Workshop on Performance-Based Seismic Design, Bled, Slovenia, June 28-July 1, 2004, PEER Publication, University of California, Berkeley. ISBN 0-9762060-0-5.
22. Krawinkler H, L Ibarra (2004) "Sidesway Collapse of Frames with Deteriorating Properties." SEAOC Convention, Monterey, CA, 2004.
23. Krawinkler H, L Ibarra (2003) "Collapse Probability of Frame Structures with Deteriorating Properties." Performance-Based Engineering for Earthquake Resistant Reinforced Concrete Structures, Int. Symp. Honoring Shunsuke Otani, pp. 325-338. Japan, 2003.

Research Reports

1. Ibarra L, E Bell, J Coleman, C Bolisetti (2017-2021) "Expansion of BISON Capabilities to Predict the Dynamic Response of Irradiated Fuel Rods. Technical Work Scope: Microscale Fuel Performance - NEAMS 1.2." Final Report. December 30th, 2021.
2. Ibarra L (2013-2017) "Seismic Performance of Dry Casks Storage for Long-Term Exposure." Quarterly Progress Reports to NEUP from March 2013 to Sept. 2016.
3. Ibarra L (2014, 2015) "Risk Assessment of Structural Integrity of Transportation Casks after Extended Storage - Aging Effect on the Cask Components Mechanical Performance-" Quarterly Progress Reports to NEUP: from June 2014 to December 2016.
4. Ibarra L (2014, 2015, 2016, 2017) "Effect of Buckling Restrained Brace (BRB) Boundary Conditions on the Seismic Resilience of Braced Frames. Status Report." Presented to the American Institute of Steel Construction (AISC) Committee
5. Ibarra L, S Dangol (2012) "Experimental Tests for Steel Cast Connectors, Final Report." Prepared for Adan Engineering, LLC. CvEEN, University of Utah, Salt Lake City, UT. August 2012.
6. Ibarra L, B Dasgupta, and A Chowdhury (2008) "Evaluation of Seismic Performance of Structures Using Probabilistic Methodologies." San Antonio, TX: CNWRA. May 2008.
7. Bhattacharyya A, S Ankem, PG Oberson, RV Kazban, KT Chiang, LF Ibarra, AH Chowdhury (2008) "An Investigation of The Low Temperature Creep Deformation Behavior of Titanium Grade 7 and Grade 5 Alloys." San Antonio, TX: CNWRA. June 2008.
8. Pomerening D, L Ibarra, K Hricisak, T Wilt, KT Chiang, R Kazban, A Chowdhury (2007) "Experimental Tests on Drip Shield–Waste Package Interaction." San Antonio, TX: CNWRA. September 2007.
9. Ibarra L, RV Kazban (2007) "Total-System Performance Assessment (TPA) Version 5.1 Code Draft User Guide. Chapter 9: Drip Shield and Waste Package Mechanical Failure (MECHFAIL)." San Antonio, Texas: CNWRA. May 2007.
10. Ibarra L, T Wilt, G Ofoegbu, R Kazban, F Ferrante, A Chowdhury (2007) "Drip Shield-Waste Package Mechanical Interaction." San Antonio, TX: CNWRA. Feb. 2007.

11. Ibarra L, T Wilt, G Ofoegbu, A Chowdhury (2007) “Structural Performance of Drip Shield Subjected to Static and Dynamic Loading.” San Antonio, TX: CNWRA. January 2007.

CONFERENCES, WORKSHOPS, AND PRESENTATIONS ----------

Conferences and workshops

Year 2010
- NSF Workshop. Salt Lake City, UT. October 2010.
- Irradiation Experimenter's Course. Las Vegas, NV. November 2010.
- UDOT Annual Conference. Salt Lake City, UT. October 2010.
- International Workshop on Infrastructure Systems for Nuclear Energy (IWISNE). Taipei, Taiwan. December 2010.

Year 2011
- 2nd National Conference in Advancing Tools and Solutions for Nuclear Material Detection. Salt Lake City, UT. May 2011.
- ACI 2011 Spring Convention. Tampa Bay, FL. April 2011.
- ASCE 2011. Las Vegas, NV. April 2011.
- NEUP Workshop. Chicago, Ill. August 2011.
- Zion Decommissioning Nuclear Power Plant visit, August 2011.
- PEER Annual Meeting. Berkeley, CA. September 2011.
- ACI 2011 Fall Convention. Cincinnati, OH. October 2011.
- UDOT Annual Conference. Salt Lake City. October 2011.

Year 2012
- NSF Workshop. Reno NV. March 2012.
- Intermountain ACI Utah Chapter Seminar. Salt Lake City, UT. March 2012.
- ACI 2012 Spring Convention. Dallas, TX. March 2012.
- 3rd International Conference on NPP Life Management (PLIM) for Long Term Operations (LTO). Salt Lake City. May 2012.
- SAP Course on Emergency Disasters. Salt Lake City. 2012.
- Portland Cement Association (PCA) Professor’s Workshop. Skokie, IL. June 2012.
- NEUP Webinars. Salt Lake City, UT. August 2012.
- 15th World Conference on Earthquake Engineering. Lisbon Portugal. September 2012.

Year 2013
- ACI 2013 Spring Convention. Minneapolis, MN. April 2013.
- NASCC Conference 2013. Saint Louis, MO. April 2013
- 22nd SMiRT Conference. San Francisco, CA. August 2013.
- ACI 2013 Fall Convention. Phoenix, AZ. October 2013.

Year 2014
- ACI 2014 Spring Convention. Reno, NV. March 2014.
- NASCC Conference 2014. Toronto, Canada. March 2014.
- Used Fuel Disposition (UFD) Campaign Annual Meeting. Las Vegas. June 2014.
- University of Innsbruck, Austria. June 2014.
- 10th National Conference on Earthquake Engineering, Anchorage, AK. July 2014

- BISON Workshop. Idaho Falls. June 2014.
- Fuel Cycle Technology (FCT) Annual Meeting. Idaho Falls, ID. November 2014.

Year 2015
- MOOSE Workshop. Salt Lake City, UT. January 2015.
- NASCC Conference 2015. Nashville, TN. March 2015.
- ACI 2015 Spring Convention. Kansas City, NV. April 2015.
- Used Fuel Disposition (UFD) Campaign Annual Meeting. Las Vegas. June 2015.
- Engineering Mechanics Institute (EMI) at Stanford University. June 2015.
- 23rd SMiRT Conference, Manchester UK. August 2015.
- 2015 Joint US-Japan Meeting. Kobe, Japan. September 2015.

Year 2016
- Waste Management Conference. Phoenix, AZ. March 2016.
- ACI Symposium Spring Symposium. SLC, UT. March 2016.
- NASCC Conference 2016. Orlando, FL. April 2016.
- ACI Spring Conference 2016. Milwaukee. April 2016.
- Used Fuel Disposition (UFD) Campaign Annual Meeting. Las Vegas. June 2016.

Year 2017
- 16th World Conference on Earthquake Engineering. Santiago, Chile. January 2017.
- NASCC Conference 2017. San Antonio, TX. March 2017.
- 2017 ASCE/SEI Congress. Denver, CO. April 2017.
- 2017 International High-Level Radioactive Waste Management Conference (IHLRWM). Charlotte, NC. April 2017.
- Used Fuel Disposition (UFD) Campaign Annual Meeting. Las Vegas. May 2017.
- AIJ Annual Meeting at Hokkaido, Japan. June 24th, 2017.
- NHERI /E-Defense Joint Research Planning Meeting. Tokyo, Japan. October 31 – November 1, 2017.

Year 2018
- Waste Management Conference. Phoenix, AZ. March 2018. “Risk Assessment of SNF Transportation Casks after Long-Term Storage.” Poster by E. Eidelpes, LF Ibarra, S Zargar, RA Medina. Presented by the first author.
- 2nd International Conference on Nuclear Power Plants: Structures, Risk & Decommissioning - 11-12 June 2018, London.
- 16th European Conference on Earthquake Engineering. Thessaloniki, Greece. 18-21 June 2018.

Year 2019
- 10-story reinforced concrete frame test at E-Defense, Japan. January 2019.
- 7th International Conference of Materials and Structural Engineering (7CIIME). Universidad Militar Nueva Granada, Bogota, Colombia. October 2019.
- International Joint Research and Workshop for the Ten-story Tests at E-Defense. Berkeley, CA. September 2019.
- Structural Mechanics in Reactor Technology, SMiRT, 25. Charlotte, NC, USA, August 4-9, 2019.

- International High-Level Radioactive Waste Management, IHLRWM, 2019. Knoxville, TN. April 14-18, 2019. Two conference articles presented by E. Eidelpes and S. Zargar.
- Waste Management Conference. Phoenix, AZ. March 2019. Poster presented by E. Eidelpes.
- NEHRI User Training Workshop at University of California, San Diego. December 16-17, 2019.

Year 2020

- NIST-FEMA Functional Recovery Workshop. Salt Lake City. January 29, 2020.
- Winter Collaboration Meeting at Idaho Falls Center for Advanced Energy Studies. January 23-24, 2020.

Year 2022

- 12th National Conference on Earthquake Engineering. Salt Lake City. UT. June 2022.

Presentations

- Using Machine Learning to Predict Building Collapse. Nagoya University, Japan. Invited Talk/Keynote, Presented, 02/14/2023.
- Uso de Machine Learning para Predecir Colapso de Edificios. 9th International Congress of Materials and Structures. Bogota, Colombia. Invited Talk/Keynote, Presented, 10/12/2022.
- "Nonlinear Analysis: Myths and Realities." Towards Mexican Seismic Resilience." Keynote Speaker. Mexico City. November 11, 2021.
- "Global Collapse Fundamentals." Nagoya University. March 22, 2021.
- "Collapse Capacity: State-of-the Art." Nonlinear Modeling Seminar. Mexico City, MX. March 20, 2021.
- "International Colloquium In-Memoriam Prof. Neftali Rodriguez Cuevas." Mexican Society of Seismic Engineering. October 23, 2020.
- "Nonlinear Methods to Assess Structural Behavior." Invited Guest. Universidad Veracruzana. Veracruz, MX. October 17, 2020.
- "Present and Future of Nonlinear Analysis Methods to Evaluate the Structural Response." Conference Mexico A Traves de Los Siglos. Mexico City. Keynote Speaker. September 17, 2020.
- "Dynamic Response of Dry Storage Casks Under Long-Return Period Seismic Events" at Purdue University, February 2020.
- "Lack of Repeatability on the Response of Free-Standing Cylindrical Casks." ASCE EMI. June 2019.
- "Effect of High Strength Materials on the Seismic Performance of Reinforced Concrete Moment Resisting Frames" at the 7th International Conference of Materials and Structural Engineering (7CIIME). Keynote Speaker. Universidad Militar Nueva Granada, Bogota, Colombia. October 2019.

- Short course on “Global Collapse Capacity” at the Universidad Militar Nueva Granada, Bogota, Colombia. October 2019.
- “Soil effects on the seismic response of free-standing dry storage casks” at the TU Wien, as part of the seminar lectures on Ground Engineering and Soil Mechanics. April 2018.
- “Seismic Performance of Reinforced Concrete (RC) Skewed Bridges Retrofitted with Buckling Restrained Braces (BRBs)", at the General Assembly of the Austrian Association for Earthquake Engineering and Structural Dynamics (OGE) in Vienna, Austria. May 2018.
- “Soil Effects on the Response of Free-Standing Dry Storage Casks” at the European Conference on Earthquake Engineering in Thessaloniki, Greece. June 2018.
- “Probabilistic Evaluation of SNF Rod Pinching Failure after Long-term Storage”, at the International Conference on Nuclear Power Plants, Structures, Risk and Decommissioning (NUPP) in London, U.K. June 2018.
- “Ring Compression Tests on un-Irradiated Zircaloy-4 Cladding Considering Fuel Pellets”, at the NUPP conference in London, U.K. June 2018.
- Short course on “Soil Dynamics” at the Technical University of Vienna. Vienna, Austria. January 2018.
- Effects of Ground Motion Incidence Angle in Reinforced Concrete Skewed Bridge Retrofitted with Buckling Restrained Braces.” ASCE/SEI Congress. Denver, CO. April 2017.
- “Effect of BRB boundary conditions on the seismic resilience of BRBFs.” AISC Research Committee. NASCC Conference. San Antonio, March 2017.
- “Effect of High Strength Steel on the Flexural Behavior of High Strength Concrete and Fiber-Reinforced Concrete Specimens,” 16th World Conference on Earthquake Engineering, January 13, 2017.
- “Lack of Repeatability on the Seismic Response of Nuclear Dry Storage Canisters.” University of Innsbruck. March 2016.
- “Seismic Retrofit of a RC Bridge with Buckling Restrained Braces.” Presented at the ASCE EMI 15. Stanford University. 06/18/2015.
- "Mechanical Performance of Spent Nuclear Fuel Casks for Long-Term Exposure" Presented at the Used Fuel Disposition (UFD) Annual Meeting. Las Vegas, NV. Invited Talk, 06/09/2015.
- "Mechanical Performance of Storage and Transportation Casks after Long-Term Exposure" Presented at the "2014 Fuel Cycle Technologies Annual Meeting." U.S. Department of Energy. Idaho Falls, ID. Invited Talk/**Keynote**, Presented, 11/06/2014.
- "Application of a collapse capacity methodology to moment resisting frames with high strength materials" Presented at the National Conference on Earthquake Engineering in Anchorage, Alaska, by my Ph.D. student Birhanu Bishaw. 07/24/2014.
- “Seismic performance of circular concrete filled tube columns for accelerated bridge construction." Presented at the National Conference on Earthquake Engineering in Anchorage, Alaska, by my Ph.D. student Catherine Tucker. 07/23/2014.

- “Collapse Capacity of Reinforced Concrete Frames with High Strength Materials" Presented at the Institute of Basic Sciences in Engineering Science. Unit of Applied Mechanics. Invited Talk, 07/01/2014.
- "Structural Performance of Spent Nuclear Fuel Casks for Long-Term Exposure" Presented at the Used Fuel Disposition (UFD) Annual Meeting. Las Vegas, NV. Invited Talk, 06/04/2014.
- Collapse Capacity of HSFRC. Keynote speaker at the XIX National Conference in Seismic Engineering. Veracruz, MX. November 2013.
- “Collapse capacity evaluation using concentrated plasticity models.” National University Autonomous of Mexico. Invited Talk. November 5th, 2013.
- “Civil Engineering in the Nuclear Industry.” UNEP Seminar Series in February 2013 at the University of Utah.
- “Optimization of High Strength Fiber Reinforced Concrete with Durability Characteristics for Seismic Applications.” 15th World Conference in Earthquake Engineering. Lisbon 2012.
- “Overview of Alternatives for Safe Disposal of High-Level Waste and Spent Nuclear Fuel.” 2nd National Conference in Advancing Tools and Solutions for Nuclear Material Detection. Salt Lake City, UT. May 2011.

Poster Presentations

1. Eidelpes E, L Ibarra, S Zargar, RA Medina (2018) “Probabilistic Risk Assessment Risk Assessment of SNF Transportation Casks after Long-Term Storage.” Waste Management Symposia. Phoenix. March 2018.
2. Eidelpes E, L Ibarra, S Zargar, RA Medina (2019) “Probability of Pinching Failure in PWR SNF after Long-Term Storage.” Waste Management Symposia. Phoenix. March 3-7, 2019.

TEACHING EXPERIENCE----------

- **University of Utah, Associate Professor** –

At the U of U I have taught the following structural engineering courses. I restructured the material in all the courses. In the case of CvEEN-7920, I had to create the material content because this course is not offered in civil engineering programs.

  - CvEEN 3210. Structural Loads and Analysis: Fall 2010-2016, Fall 2018-2021.
  - CvEEN 6250. Dynamics of Structures I: Spring 2011, Spring 2012, Fall 2012, Fall 2013, Fall 2014, Fall 2015, Fall 2016, and Fall 2018.
  - CvEEN-6230. Steel Design II: Fall 2013, Fall 2022.
  - CvEEN 7920. Seismic Design of Nuclear Facilities: Spring 2013, Spring 2015, Spring 2020.
  - CvEEN 7255. Advanced Dynamics of Structures: Spring 2014, Spring 2016, Spring 2019, and Spring 2021.
  - CvEEN 4222. Steel Design II: Spring 2020-2023.
  - CvEEN-2010. Statics: Spring 2022.

- **Technical University of Vienna, Visiting Professor** –

  - Soil Dynamics (BodenDynamik) graduate course: Winter 2018.

- **Adjunct Professor** – Undergraduate courses in the Department of Civil Engineering of the University of Sonora

  - Design of Reinforced Concrete Structures II, Spring 1993
  - Design of Steel Structures I, Fall 1995
  - Design of Steel Structures II, Fall 1994, Spring 1995, Spring 1996

- **Teaching Assistant** – In the graduate courses “Advanced Structural Mechanics” and “Structural Instability,” at National University of Mexico (1998, 1999)

- **Teaching Assistant** – In the graduate courses “Behavior of Structural Systems” (Fall 2001) and “Advanced Structural Design” (Winter 2002) at Stanford University.

Teaching Awards

- The Ben Jacobsen Kingfisher Bend Ranch Award for exceptional effectiveness in teaching. College of Engineering. U of U (2015).

- Outstanding Teacher of the Year. CvEEN Department at the U of U (2014)

- Outstanding Teacher of the Year. CvEEN Department at the U of U (2013)

- Rated in top 15% of instructors in College of Engineering in

  - Fall 2011 (CvEEN-3210)
  - Spring 2012 (CvEEN-6250)

- Fall 2013 (CvEEN-3210; and CvEEN-6250)
- Spring 2014 (CvEEN-7255)
- Fall 2015 (CvEEN-3210)
- Fall 2018 (CvEEN-6250)

Teaching Seminars

- University of Utah Annual Teaching Symposium (August 2011)
- Effective Teaching (February 6-7, 2012 by Professor Richard M. Felder at University of Utah.
- Portland Cement Association (PCA) Professor's Workshop (July 23-27, 2012) at Skokie, Illinois
- Effective Teaching (October 14-15, 2013) by Professor Richard M. Felder at University of Utah.

MENTORING ACTIVITIES ----------

Postdoctoral Scholar Supervised

1. Uma Ramasamy (Summer 2014 – Spring 2015)
   Topic: Finite element modeling of spent nuclear fuel rod buckling behavior.

   Her research is documented in one conference paper (2015), and a journal paper to be submitted in Fall 2015.

Ph.D. Students

1. Ramesh Adhikari, Ph.D. (Spring 2023 – present)
   Dissertation topic: Effect of vertical accelerations on the response of building components.

2. Prakash Gaire, Ph.D. (Spring 2021 – present)
   Dissertation topic: Using machine learning to predict collapse capacity of buildings.

3. Albert Dahal, Ph.D. (Fall 2019 – present)
   Dissertation topic: Expanding dynamic capabilities of Bison.

4. Hrishiv Neupane, Ph.D. (Fall 2018 – present)
   Dissertation topic: Expanding dynamic capabilities of Bison.

5. Elmar Eidelpes, Ph.D. (Fall 2015 – Spring 2019)
   Dissertation topic: A Probabilistic Assessment of the Structural Integrity of Spent Nuclear Fuel Transportation Casks under Accident Conditions after Long-Term Storage." May 2019.

6. Catherine Tucker, Ph.D. (Spring 2014 – on leave of absence)
   Dissertation topic: Effect of boundary conditions on seismic resilience of BRB frames.

7. Yuandong Wang, Ph.D. (Fall 2013 – August 2017)
   Dissertation topic: Seismic behavior of skewed RC bridges using BRBs.

8. Sharad Dangol, Ph.D. (Spring 2013 – July 2017)
   Dissertation topic: Seismic performance of dry storage casks for long-term periods

9. Hamid Sarmady, Ph.D. (Fall 2011 – Spring 2013, unfinished).
   Dissertation topic: 3D seismic isolation of next generation nuclear power plants

10. Birhanu Bishaw, Ph.D. (Spring 2011 – Fall 2015)
    Dissertation topic: Seismic performance of high strength fiber reinforced concrete up to the limit state of collapse

MS Students

1. Pratiksha Dhakal (Fall 2019 – Present).
   Thesis topic: Numerical simulation of the effects of boundary conditions on seismic performance of BRB frames.

2. Chris Wong (Fall 2019 – Present).
   Thesis topic: Expanding dynamic capabilities of Bison.

3. Rishav Poudval, M.S. (Fall 2014 – Spring 2016)
   Thesis topic: “Effect of Pellet-Cladding Interaction (PCI) and Degradation Mechanisms on Spent Nuclear Fuel Rod Mechanical Performance during Transportation.” May 2016.

4. Catherine Tucker, M.S. (Fall 2012 – Spring 2014)
   Thesis topic: Concrete Filled Steel Tubular (CFST) columns for Accelerated Bridge Construction (ABC).

5. Esra Hasanbas, M.S. (Summer 2012– Spring 2013)
   Thesis topic: Structural response of steel frames subjected to harmonic loads

6. Sharad Dangol, M.S. (Spring 2011– Fall 2012)
   Thesis topic: Experimental tests for steel cast connectors.

Other Graduate Students

1. Tsantaki Stella, Ph.D. student (Spring 2013 – Summer 2014, Co-chair in collaboration with Prof. Christoph Adam from University of Innsbruck)
   Dissertation topic: Effect of Epistemic Uncertainties on Collapse Capacity Spectra.

2. Akash Bahvsar (Fall 2014 – Spring 2015)
   Topic: Material deterioration of fuel rods after long-term storage.

3. Kalen Wilson, M.S. (Fall 2012)
   Performance assessment of a reinforced concrete frame based on ASCE-41

Undergraduate students working on Independent Studies

1. Joshua Freer, B.S. (Fall 2011)
   Basic concepts of buckling restrained brace performance

2. Mark Young, B.S. (Spring 2011)
   Effect of high temperature on plane concrete mechanical properties

3. Kevin Carter, B.S. (Fall 2015)
   Experimental tests of BRBFs.

Ph.D. Committees

1. Duc Tran (2022, University of Utah)
   Dissertation: “Seismic Design of Grouted Duct Connections with GFRP Reinforcement and Post-Tensioning for Self-Centering ABC Columns.”
   Main Advisor: Professor Chris Pantelides.

2. Ijan Dangol (2021, University of Utah)
   Dissertation: “Resilient hybrid bridge bent in seismic regions using post-tensioned columns and buckling restrained braces for accelerated bridge construction.”
   Main Advisor: Professor Chris Pantelides.

3. Suman Neupane (2024, University of Utah)
   Dissertation topic: Column piers used in ABC with recessed spliced sleeves and intentional debonding.
   Main Advisor: Professor Chris Pantelides.

4. Jake Dunn (2022, University of Utah)
   Dissertation topic: Experimental seismic performance of BRBs on concrete frames.
   Main Advisor: Professor Chris Pantelides.

5. Ian Dangol (2021, University of Utah)
   Dissertation topic:
   Main Advisor: Professor Chris Pantelides.

6. Anurag Upadhyay (2020, University of Utah)

Dissertation: Performance-based Seismic Retrofit and Design of New Bridges using Buckling Restrained Braces and Self-centering Energy Dissipation Systems.
Main Advisor: Professor Chris Pantelides.

7. Paul Geimer (2020, University of Utah)
   Dissertation topic: Structural Health Monitoring and Dynamic Responses of Natural Rock Arches.
   Main Advisor:

8. Joel Parks (2020, University of Utah)
   Dissertation Topic: Seismic performance of anchored casks.
   Main Advisor: Professor Chris Pantelides.

9. Andrew Ruoyang Wu (2018, University of Utah)
   Dissertation topic: Seismic Rehabilitation of Severely Damaged RC Bridge Columns using Plastic Hinge Relocation.
   Main Advisor: Professor Chris Pantelides.

10. Dahee Han (2017, University of Utah)
    Dissertation: Development of Transportable Concrete Container for Low and Intermediate Level of Radioactive Waste.
    Main Advisor: Professor Pedro Romero

11. David Kampenhuber (Spring 2016, University of Innsbruck)
    Dissertation Topic: Collapse capacity of SDOF systems with material deterioration.
    Main Advisor: Professor Christoph Adam

12. Wenjing Xu (2016, University of Utah)
    Dissertation Topic: Buckling performance of buckling-restrained brace (brb) and connection assembly.
    Main Advisor: Professor Chris Pantelides.

13. Min Ook (Thomas) Kim (2016, University of Utah)
    Dissertation Topic: Cracking and debonding of a thin fiber-reinforced concrete overlay due to temperature gradients.
    Main Advisor: Professor Amanda Bordelon.

14. MJ Ameli (2016, University of Utah)
    Dissertation Topic: Seismic Design of Grouted Splice Sleeve Connections for Bridge Piers Used in Accelerated Bridge Construction.
    Main Advisor: Professor Chris Pantelides.

15. Miguel Negrete (August 2015, University of New Hampshire)
    Dissertation Topic: Numerical updating on collapse simulation of multi-story building through hybrid testing.
    Main Advisor: Professor Ricardo Medina.

16. Erika D Weber (May 2014, University of Utah)
    Dissertation Topic: Grouted transverse full-depth precast bridge deck joint integrity.
    Main Advisor: Professor Chris Pantelides.

17. Thomas E. Hales (October 2014, University of Utah)
    Dissertation Topic: Slender concrete columns reinforced with fiber reinforced polymer spirals.
    Main Advisor: Professor Chris Pantelides.

18. Styliani Tsantaki (Summer 2014, University of Innsbruck)
    Dissertation Topic: A contribution to the assessment of the seismic collapse capacity of basic structures vulnerable to the destabilizing effect of gravity loads.
    Main Advisor: Professor Christoph Adam

MS-Thesis Committees

- Dipendra Thapa (2020)
- Avinash Rajesh Rishi (2019)
- Vanessa McEntree (2019)
- Murphy Colton (2019)
- Bhaskar Kunwar (2018)
- Priyank Sankholkar (2017)
- Yohan Karkera (2016)
- Anurag Upadhyay (2015)
- Adam Egan (2015)
- Anusha Musunuru (2014)
- Shun Li (2014)
- Zachary P. Christopulos (2014).
- Anna Marie Weidner (2013)
- Jayson D. Love (2013)

MS-Non-Thesis

Junwei Liu (2018), Gary Jensen (2018), Lee Petersen (2018), Jeffery Thomas (2018), Jason Dao (2017), Raja Nikesh Reddy Cholleti (2014), Benjamin Smith, Ricardo Piacenti, Adam Egan, Fernando Castillo Gonzalez, Ayalew Gebregiorgis (2013), Titus Cordingly, Bradley Hale, Darren Dickson, Wei Gao, Dahee Han, Gregory Dunn, Jayson Love (2012), Kalen Wilson, Ryan Davis (2011).

Graduate student conferences

- Elmar Eidelpes presented at the International High-Level Radioactive Waste Management Conference (IHLRWM). Knoxville, TN, NC. April 2019.
- Matt Wang presented at the 11th NCEE in Anaheim CA. June 2018.
- Elmar Eidelpes presented at the International High-Level Radioactive Waste Management Conference (IHLRWM). Charlotte, NC. April 2017.
- Matt Wang presented at the 16 WCEE in Santiago, Chile. January 2017.
- Sharad Dangol presented at the 2016 Waste Management Conf. in Phoenix, AZ.
- Elmar Eidelpes attended the 2016, 2017, and 2019 Waste Management Conference at Phoenix, AZ.
- Yuandong (Matt) Wang (PhD student) attended the OpenSees workshop in Richmond, CA in September 2014.

- Leighton Weeks (MS student) attended the 2014 NASCC Steel Conference in Toronto, Canada.
- Birhanu Bishaw and Catherine Tucker (Ph.D. students) attended the 10th National Conference on Earthquake Engineering in Anchorage, Alaska (2014).
- Sharad Dangol (PhD student) and Uma Ramasamy (Post-doc fellow) attended the BISON Workshop in Idaho Falls, June 24-25, 2014
- Catherine Tucker (PhD student) attended the OpenSees workshop in Richmond, CA in September 2013.
- Sharad Dangol (PhD student) and Hamid Sarmady (PhD student) attended the SMiRT Conference in San Francisco, CA in August 2013.

ACADEMIC AND PROFESSIONAL SERVICE ----------

U of U Service

1. Member of the University Academic Senate (Fall 2019 – present).
2. Lead of infrastructure committee in the CvEEN Department (2018 – present).
3. Executive committee member in the CvEEN Department (2018 – present).
4. Graduate application review committee member in the CvEEN Department (2018 – present).
5. Strategic Hiring and Planning Committee member in the CvEEN Department (2018 – present).
6. Member of safety committee (2012-2018)
7. Member of infrastructure committee in the CvEEN Department (2010 – 2018).
8. Member of graduate committee in the CvEEN Department (2010 – present).
9. Member of the diversity committee of the faculty governance at the U of U in 2013.
10. Member of the U of U library committee (2014 – present).
11. Search committee for lecturer (2013).

Professional Service Activities

- Editorial board member of The Structural Design of Tall and Special Buildings Journal.
- Associate editor of the ASCE Journal of Structural Engineering

Peer Reviewer

Peer-reviewer of the following journals:

1. ASCE Journal of Structural Engineering
2. American Concrete Institute Structural Journal
3. ASCE Journal of Bridge Engineering
4. Engineering Structures Journal
5. Earthquake Engineering and Structural Dynamics
6. Earthquake Spectra
7. Structures and Buildings Journal
8. Bulletin of Earthquake Engineering
9. Progress in Nuclear Energy Journal
10. The Structural Design of Tall and Special Buildings
11. Scientia Iranica
12. Journal of Constructional Steel Research
13. Structure and Infrastructure Engineering
14. Iranian Journal
15. Structures Journal
16. Nuclear Engineering and Design
17. Earthquake Engineering Encyclopedia
18. Advances in Structural Engineering

19. Revista de Ingenieria Sismica
20. Journal of Vibration and Control
21. KSCE Journal of Civil Engineering
22. Annals of Nuclear Energy
23. Journal of Building Engineering
24. Advances in Structural Engineering

Proposal panel Reviewer

NSF Network for Earthquake Engineering Simulation (NEES) Reviewer Panelist (2011).

NSF CMMI Reviewer Panelist (2021).

Reviewer of NEUP pre-proposals. 2010, 2011, 2012, 2013, 2014, 2018, 2019.

Reviewer of NEUP proposals. 2013, 2014, 2019.

Reviewer of PAMS, Department of Energy

ACI 374 Committee

Technical lead for updating the ACI ITG-4.3R-07 report on structural design and detailing for high-strength concrete in moderate to high seismic applications.

Summary of ASCE 43-05 and ATC-58 reports

Research Seminars

Organizer of the following professional seminars and workshops at the U of U CvEEN department:

- MOOSE Workshop from Idaho National Laboratory on January 6 and 7, 2015.
- Seminar of Dr. Takuya Nagae from the National Research Institute for Earth Science and Disaster Prevention, Japan at the Civil Engineering Department at the U of U. His presentation was titled: Large Scale Tests at the E-Defense Shaking Table (April 23, 2014).
- Seminar of Professor Christoph Adam from the University of Innsbruck on collapse capacity spectra (November 2013).

Visiting Scholar

Host Visiting Professor Christoph Adam during his stay in the CvEEN Department from October to December 2013.

Moderator

12th National Conference in Earthquake Engineering. Moderator of two sessions.

10th National Conference in Earthquake Engineering. Moderator of the steel buildings design session.

2017 ASCE/SEI Conference. Moderator of bridge performance session.

2019 SMiRT 25th Conference. Session D5-S14: Response of Structures, Systems, and Components 3.

INDUSTRIAL EXPERIENCE ----------

- **Consultant** –
  - Millcreek Engineering: Evaluation of the dynamic response of steel frames subjected to harmonic loads (2012)
  - SwRI: Study on effects of aging of concrete on the seismic performance of reinforced concrete structures (2011)
  - Structural designer of industrial plants (1996-1997)

- **Structural Engineer:** Design and coordination of over twenty structural projects including steel and reinforced concrete buildings and factories

- **Construction Engineer:** Resident engineer in construction projects of housing and urban infrastructure

PROFESSIONAL CERTIFICATION ----------

F.E. (EIT) Certificate
Professional Engineer in TX. P.E. License Number: 102132.

PROFESSIONAL MEMBERSHIPS----------

Member of the Earthquake Engineering Research Institute (EERI) and EERI Utah Chapter
Member of the American Society of Civil Engineers (ASCE)
Member of the American Concrete Institute (ACI). Voting member of ACI 374, and associate member of ACI-349
Member of the American Institute of Steel Construction (AISC)
Member of the American Society for Engineering Education (ASEE)