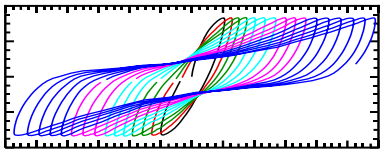


Amalesh Jana
Curriculum Vitae

School of Civil and Construction Eng.
Oregon State University
101 Kearney Hall
Corvallis, OR 97331

EMAIL: janaa@oregonstate.edu
WEBSITE: http://janaaamalesh.wixsite.com/amalesh

Academic Background

Instructor	Oregon State University; From December 2021 to Present
Postdoctoral Research Associate	Oregon State University; July 2021 to September 2022
Doctor of Philosophy (Geotechnical Eng.)	Oregon State University; September, 2017 to June 2021
Master of Technology (Geotechnical Eng.)	Indian Institute of Technology (IIT) Guwahati, 2017
Bachelor of Engineering (Civil Eng.)	Jadavpur University Kolkata; June, 2014

Professional History

Academic Experience

2021 – 2022 **Postdoctoral Research Associate**, Oregon State University. Topic: *Proposed AASTHO Specifications for Design of Piles for Downdrag*. Advisor: Professor Armin W. Stuedlein, In collaboration with Professor Richard Coffman, University of Arkansas and Professor Aaron Budge, Minnesota State University.

2017 – 2021 **Ph.D. Research Fellow**, Oregon State University. Dissertation Topic: *Use of Controlled Blasting to Quantify the Dynamic, In-Situ, Nonlinear Inelastic Response of Soils*. Advisor: Professor Armin W. Stuedlein

2016 – 2017 **Research Assistant**, Indian Institute of Technology (IIT) Guwahati. Thesis Topic: *Stability Analyses of Jointed Rock Slope Using Finite Element Explicit Joint Model.* Advisor: Professor Arindam Dey and Professor Sreedeep S.

2015 – 2016 **Research Fellow**, Indian Institute of Technology (IIT) Guwahati. Project Topic*: Influence of drainage characteristics of Nonwoven Geotextile on the performance of a Reinforced Soil Wall comprising Unsaturated Marginal Backfill.* Advisor: Professor Arindam Dey.

2015 – 2016 **Teaching Assistant**, Indian Institute of Technology (IIT) Guwahati

Professional Experience

2014 – 2015 **Civil and Structural Design Engineer**, Development Consultants Private Limited, Kolkata, West Bengal.

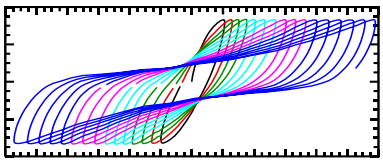
2013 (Summer) **Civil Engineer Intern**, Macintosh Burn Limited, Industrial Training. Kolkata, West Bengal.

Teaching Accomplishment, Oregon State University

Winter 2022: Instructor for ENGR 213 Strength of Materials, Number of Enrolled Students- 106, Overall Teaching Evaluation Score- 5.8/6.0

Spring 2022: Instructor for ENGR 213 Strength of Materials, Number of Enrolled Students- 210, Overall Teaching Evaluation Score- 5.7/6.0

Summer 2022: Instructor for ENGR 213 Strength of Materials, Number of Enrolled Students- 53, Overall Teaching Evaluation Score- *NA*



Fall 2022: Instructor for CE 372 Geotechnical Engineering, Number of Enrolled Students- *to be announced soon*, Overall Teaching Evaluation Score- *NA*

Fall 2022: Instructor for ENGR 211 Statics, Number of Enrolled Students- 135, Overall Teaching Evaluation Score- *NA*

Awards and Honors

2022	**Editor's Choice** Paper Award, Canadian Geotechnical Journal
2019	Cascadia Lifelines Program (CLIP) **Travel Award**.7th Int. Conference Earthquake Geotechnical Engineering, Rome, Italy.
2019	Received **1st Prize** in Graduate Research Showcase. Oregon State University.
2017-2018	**Jerry Yamamuro Graduate Fellowship,** Oregon State University.
2017-2018	**OSU Foundation Fellowship** Tuition Support, Oregon State University.
2015-2017	**M.H.R.D. GATE Fellowship**, Indian Institute of Technology (IIT) Guwahati
2017	**Second Topper** in M.Tech Geotechnical Engineering, IIT Guwahati.
2016	**Best Paper Award** at ISSMGE Conference, Mumbai, India.
2016	**Best Presentation Award**, 2nd Prize by Springer, ISSMGE Conference, Mumbai, India.
2015	Certified by **United Nations** for action against climate change, An Initiative by International Center for Culture and Education, **UNFCCC.**
2014	Secured **98.96 Percentile** in Graduate Aptitude Test in Engineering (**GATE**).
2010	Secured a position within **top 0.5% out of 130,000** candidates in the State Merit List of West Bengal Joint Entrance Examination (**WBJEE**) for Engineering.
2006	**National Means-Cum-Merit Scholarship (NMMS),** Ministry of Human Resource Development, Government of India

Publications

Refereed Journal Publications

In Review

1. Dadashiserej, A., **Jana, A.**, Zhongze Xu., Stuedlein, A. W., Evans, T.M., Stokoe II, K.H., and Cox, B. (2022). "Dynamic Response of Low Plasticity Silt Deposit: Comparison of In-Situ and Laboratory Response." *Canadian Geotechnical Journal, In-Review.*
2. Stuedlein, A.W., **Jana, A.,** Dadashiserej and Yang, X. (2022). "On the In-situ Cyclic Resistance of Natural Sand and Silt Deposits." *Journal of Geotechnical and Geoenvironmental Engineering (**ASCE**), Second Review Submitted.*
3. Dadashiserej, A., **Jana, A**., Stuedlein, A. W. and Evans, T. M. (2021). "Effect of Overburden Stress and Plasticity on the Cyclic Resistance of Silts." *Journal of Geotechnical and Geoenvironmental Engineering (**ASCE**), In Review.*

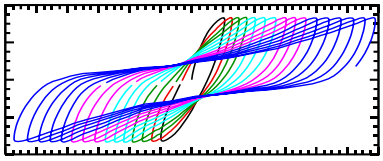
Published / Accepted and In Press

4. **Jana, A.** and Stuedlein, A.W. (2022). "Discussion of A new V_s-Based Liquefaction Triggering Procedure for Gravelly Soils." *Journal of Geotechnical and Geoenvironmental Engineering (**ASCE**), Accepted in press.*
5. **Jana, A**., Dadashiserej, A., Zhang, B., Stuedlein, A. W., Evans, T.M., Stokoe II, K.H., and Cox, B. (2021). "Multi-directional VibroSeis Mobile Shaking and Controlled Blasting to Determine the In-Situ Dynamic Response of a Low Plasticity Silt Deposit." *Journal of Geotechnical and Geoenvironmental Engineering (**ASCE**), Accepted in press.*
6. Stuedlein, A. W., Dadashiserej, A., **Jana, A**., and Evans, T. M. (2021). "On the Liquafaction Susceptibility Response of Intact Nonplastic and Plastic Silts." *Journal of Geotechnical and Geoenvironmental Engineering (**ASCE**), Accepted in press*

7. Dadashiserej, A., **Jana, A**., Stuedlein, A. W. and Evans, T. M. (2021). "Effect of Strain History on the Monotonic and Cyclic Response of Natural and Reconstituted Silts." *Soil Dynamics and Earthquake Engineering. https://doi.org/10.1016/j.soildyn.2022.107329*
8. **Jana, A.** and Stuedlein, A.W. (2020). "Dynamic *In-Situ* Nonlinear-inelastic Response of a Plastic Silt Deposit." *Canadian Geotechnical Journal*., https://doi.org/10.1139/cgj-2020-0652. (**Selected for Editor's Choice Paper**)
9. **Jana, A.,** Donaldson, A. M., Stuedlein, A. W. and Evans, T. M. (2020). "Deep, *In-Situ* Nonlinear Dynamic Testing of Soil with Controlled Blasting: Instrumentation, Calibration, and Example Application to a Plastic Silt Deposit." *Geotechnical Testing Journal (**ASTM**), https://doi.org/10.1520/GTJ20190426*
10. **Jana, A.** and Stuedlein, A.W. (2020). "Dynamic *In-Situ* Response of a Deep, Medium Dense Sand Deposit." *Journal of Geotechnical and Geoenvironmental Engineering (**ASCE**)*, Vol. 147, 6. TBD, *https://doi.org/10.1061/(ASCE)GT.1943-5606.0002523*.
11. **Jana, A.** and Stuedlein, A.W. (2021). "Monotonic, Cyclic and Post-Cyclic Response of an Alluvial Plastic Silt Deposit." *Journal of Geotechnical and Geoenvironmental Engineering (**ASCE**)*, Vol. 147, No. 3, *https://doi.org/10.1061/(ASCE)GT.1943-5606.0002462*.
12. **Jana, A**. and Dey, A. (2018). "Combined Functioning of Geotextile as Barrier and Drainage Material in Unsaturated Earth Retaining Structures." *Indian Geotechnical Journal*, Vol. 48, No. 342. https://doi.org/10.1007/s40098-017-0268-0.
13. Aswathi, C K., **Jana, A.**, Dey, A. and Sreedeep, S. (2018). "Stability Assessment of Reinforced Rock Slope Based on Two-Dimensional Finite Element Approach: A Himalayan Case Study." *The Bridge and Structural Engineer*, Vol. 48, No. 2, 56-62.

Refereed Conference Proceedings

14. Hudson, K.S, Zimmaro, P., Ulmer, K., Carlton, B., Stuedlein, A., **Jana, A.,** Dadashiserej, A., Brandenberg, S. J., Moss, R.E., Franke, K. W., Cetin, Ö., Stamatakos, J., Kramer, S. L., and Stewart, J. P. (2021). Laboratory Component of Next-generation Liquefaction Project Database. 4th International. Conference on Performance-based Design in Earthquake. Geotechnical Engineering (PBD-IV) in Beijing, China.
15. Stuedlein, A.W. and **Jana, A.** (2021). "In-Situ Liquefaction Testing of a Medium Dense Sand Deposit and Comparison to Case History- and Laboratory-based Cyclic Stress and Strain Evaluations" 4th International. Conference on Performance-based Design in Earthquake. Geotechnical Engineering (PBD-IV) in Beijing, China (**Selected for Theme Lecture**).
16. Dadashiserej, A., Zhang, B., **Jana, A**., Stuedlein, A. W., Stokoe II, K.H., Evans, T.M. and Cox, B. (2021). "In-Situ and Laboratory Cyclic Response of an Alluvial Plastic Silt Deposit." *Proceedings of the 20th International Conference on Soil Mechanics and Geotechnical Engineering*, Sydney, Australia (Accepted).
17. Dadashiserej, A., **Jana, A**., Ortiz, S.C., Walters, J., Stuedlein, A. W. and Evans, T.M. (2021). "Monotonic, Cyclic, and Post-Cyclic Response of Willamette River Silt at the Van Buren Bridge." *In Geo-Congress 2022,* Charlotte, North Carolina, USA.
18. **Jana, A**., Stuedlein, A. W., Wharton, T. and Bock, J. (2021). "Deep, Dynamic *In-Situ* Excess Pore Pressure Response of a Medium Dense Sand." *In the San Fernando Earthquake Conference – 50 years of Lifeline Engineering (Lifelines2021), University of California Los Angeles, California. USA.*
19. Stuedlein, A.W., **Jana, A.,** Donaldson, A.M., Batti, J.J., and Evans, T.M. (2019). "Instrumentation and Calibration Protocols for Deep, In-Situ Liquefaction Testing with Controlled Blasting." *Proc., 7th Int. Conf. Earthquake Geot. Engrg.*, Rome, Italy, 10 pp.
20. Mithresh, P., **Jana, A.**, Dey, A. and Sreedeep, S. (2017). "Stability assessment of rock slope using finite element modeling." *International Conference on Geo techniques for Infrastructure Projects*, Thiruvananthapur.India, 4 pp.



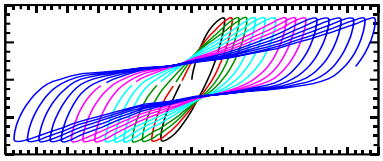
21. Alammyan, A., Pegu, S., **Jana, A.** and Sreedeep, S. (2017). "A Methodology to Model Effective Two-Dimensional Plane Strain Analysis of Jointed Rock Slope" *GeoNEst: IGC*, Guwahati, India, 4 pp.
22. Kallam, N., Bora, M., **Jana, A**., Sreedeep, S. and Krishna, AM. (2017). "Stability Assessment and Designing of Jointed Rock Slope Using Finite Element Method" *GeoNEst: IGC*, Guwahati, India, 4 pp.
23. Dixit, A., Pal, A.K., **Jana, A**. and Sreedeep, S. (2017). "Effect of Geological Strength Index on Factor of Safety of Jointed Rock Slope." *GeoNEst: IGC*, Guwahati, India, 4 pp.
24. **Jana, A.,** Dey, A. and Sreedeep, S. (2017). "Stability analysis of a Himalayan Rock Slope using combined continuum interface element method." Geotechnics for Natural and Engineered Sustainable Technologies: *Indian Geotechnical Conference*, Guwahati, India, 4 pp.
25. **Jana, A**. and Dey, A. (2016). "Unsaturated Behavior of Geotextile in Earth Retaining Structure Under Rain Water Infiltration." *International Geotechnical Engineering Conference on Sustainability in Geotechnical Engineering Practices and Related Urban Issues, ISSMGE*, Mumbai, India, pp. 1-4 (**Merited the Best Paper Award).**
26. **Jana, A.** and Dey, A. (2016). "Effectiveness of Geotextile Reinforced Soil Walls Backfilled with Fine Soil." *6th Asian Regional Conference on Geosynthetics*, New Delhi, India pp. 440-449.
27. **Jana, A**. and Dey, A. (2016). "Conflicting Behavior of Geotextiles in Reinforced Clay wall" *NorthEast Students Geo-Congress*: NESGC 2016, Agartala, India, pp. 42-51.

Book Chapters Written

28. **Jana, A**., Mithresh, P., Dey, A., Sreedeep, S. and Murli Krishna, A. (2018). "Static and Dynamic Slope Stability Assessment of Himalayan Rock Slope." *Geotechnical Applications: IGC 2016*, Volume 4. pp. 231-237. https://doi.org/10.1007/978-981-13-0368-5_25
29. Aswathi C.K., **Jana A.,** Dey A., Sreedeep S. (2019). "Stability Assessment of Reinforced Rock Slope Based on Two-Dimensional Finite Element Approach: A Himalayan Case Study." *Geotechnics for Transportation Infrastructure*. Sundaram R., Shahu J., Havanagi V. (eds), Lecture Notes in Civil Engineering, Vol. 28. Springer, Singapore. https://doi.org/10.1007/978-981-13-6701-4_41

Research Reports *(Reports to Sponsors)*

30. Stuedlein, A. Evans, M. Dadashiserej, A. Jana, A. (2021) "Oregon State University Blast Array with T-Rex"in *Collaborative Research: Bridging the In-situ and Elemental Cyclic Response of Transitional Soils*. DesignSafe-CI. https://doi.org/10.17603/ds2-c74j-e947.
31. Zhang, B. Stokoe, K. Cox, B. Stuedlein, A. Roberts, J. Hwang, S. Xu, Z. Menq, F. Evans, M. Jana, A. Dadashiserej, A. (2021) "Collaborative Study on Dynamic Response of Transitional Soils", in *Collaborative Research: Bridging the In-situ and Elemental Cyclic Response of Transitional Soils*. DesignSafe-CI. https://doi.org/10.17603/ds2-81g3-ef87.
32. Stuedlein, A.W., Evans, T. M., Dadashiserej, A. and **Jana, A** (2021). "Cyclic Response and Softening of Western Oregon Silts and Assessment Within the Simplified Method Framework," Final Report, Prepared for the Cascadia Lifelines Program (CLiP), OR, 95 pp.
33. Stuedlein, A.W., **Jana, A.** and Donaldson, A**.** (2020). "Undrained Shear Strength of Plastic Silt Subject to Blast-induced Excess Pore Pressures," Final Report, Prepared for the Oregon Department of Transportation, Salem, OR, 48 pp.
34. Stuedlein, A.W. and **Jana, A.** (2020). "Evaluation of Deep, *In-Situ* Blast-Induced Dynamic Response of Natural Silt and Sand: Dynamic Response of Soils at the Port of Portland," Final Report, Prepared for the Port of Portland, Portland, OR, 311 pp.



Sponsored Research Projects and Responsibility

Since Joining Oregon State University

National Science Foundation (2017-2020). "Collaborative Research: Bridging the *In-situ* and Elemental Cyclic Response of Transitional Soils," Armin W. Stuedlein (PI), T. Matthew Evans (Co-PI); *In collaboration with Kenneth Stokoe and Brady Cox, The University of Texas at Austin.*

- Instrumented *in-situ* silt deposit and dynamically loaded using a large VibroSeis mobile shaker, T-Rex, and controlled blasting at the Port of Longview, Washington.
- Characterized the ground motions from controlled blasting and developed three-dimensional strain field of *in-situ* silt deposit.
- Compared the *in-situ* dynamic soil properties derived from these two highly different field-testing techniques to establish the fundamental soil response.
- Conducted cyclic, stress- and strain-controlled, direct simple shear testing and other advanced laboratory tests on specimens prepared from intact samples.

Port of Portland in Collaboration with the Cascadia Lifelines Program (2017-2019). "Deep, In-situ Dynamic Response of Liquefiable Soils," Armin W. Stuedlein (PI).

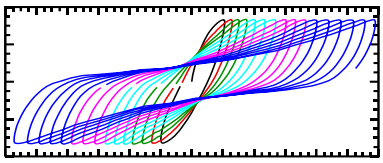
- Developed instrumentation, calibration, and analytical protocols to obtain the coupled, *in-situ*, response between nonlinear shear modulus reduction and pore pressure generation of deep sand (~ 25 m) and silt deposits (~ 10 m).
- Developed novel controlled blasting protocol to derive fundamental dynamic properties of the soil *in-situ* at a great depth.
- Conducted a comprehensive suite of laboratory tests on reconstituted and intact specimens, ranging from constant rate of strain consolidation, monotonic direct simple shear (DSS) tests, stress- and strain-controlled, cyclic DSS tests, and post-cyclic monotonic DSS tests.

National Science Foundation (2019-2020). "Role of Spatial Variability in Liquefaction Consequence Severity," Armin W. Stuedlein, (PI), *in collaboration with Chris McGann and Brendon Bradley, University of. Canterbury, New Zealand.*

- Assisted in the pre-travel, remote reconnaissance of liquefaction sites in Christchurch, NZ which had experienced various degrees of liquefaction during the Canterbury Earthquake Sequence.
- Conducted an extensive CPT investigation at four liquefaction case history sites in Christchurch.
- Performed laboratory investigation of liquefied and non-liquefied soils in the University of Canterbury laboratories.
- Developed Matlab Code to apply random field model-based methods to identify the scale of fluctuation (autocorrelation) and coefficient of inherent variability of soils at the four liquefaction case history sites.

Oregon Department of Transportation, ODOT (2017-2019), "Determining the Post-Blast Liquefaction Strength of Silt," Armin W. Stuedlein (PI)

- Measured undrained shear strength of plastic silt subject to blast-induced excess pore pressures using the vane shear test.
- Compared the post-blasting undrained shear strength of the *in-situ* silt deposit with the post-cyclic undrained shear strength of intact silt deposit derived from stress-controlled cyclic Direct Simple Shear (DSS) test.



Cascadia Lifelines Program (2020-2021), "Advancing the Practice of Cyclic Softening Assessments of Silt Soils." Armin W. Stuedlein (PI)

- Develop new and/or modify existing procedures for the determination of the equivalent number of shearing stress cycles from transient (blast-induced) shear waves applied to *in situ* low plasticity soils.
- Validate the method using Vibroseis mobile shaker data from the same *in situ* instrumented arrays.
- Evaluate the influence of the *CRR* vs *N* relationship using the equivalent number of shearing stress cycles from transient earthquake ground motions on the magnitude scaling factor for silt soils.

Pacific Earthquake Engineering Research Center PEER (2021-2022), "Advancing Triggering criteria, Estimation of permanent deformations." Armin W. Stuedlein (PI)

- Develop a new methodology to estimate site-specific *CRR-N* and *MSF* curves using laboratory index data and *OCR.*
- Form a robust dataset and address a critical need to synthesize the variously-developed laboratory test data to refine and improve the Simplified Method for cyclic softening assessments

National Cooperative Highway Research Program (NCHRP), Transportation Research Board (TRB), Federal Highway Administration (FHA) (July, 2021-Present). "Proposed AASHTO Specifications for Design of Piles for Downdrag," Professor Armin W. Stuedlein (Co-PI), Professor Richard Coffman (PI), University of Arkansas and Professor Aaron Budge (PI), Minnesota State University.

- Review the fundamental behavior of piles subject to downdrag and propose design specifications for the implementation of the neutral plane method for the evaluation of downdrag and the static and seismic design of piles.
- Full review of the literature will be continued throughout the duration of the project to develop load transfer (*t-z* and *q-z*) graph for various instrumented piles.
- Perform full-scale tests to investigate the effects/mitigations of liquefaction induced dragload on groups of piles (H-piles, concrete filled steel shell piles, and cast-in-place concrete piles at Nucor Hickman plant in Armorel, Arkansas.

Prior to Joining Oregon State University

IIT Guwahati Graduate Program (2016-2017), "Stability Analyses of Jointed Rock Slope Using Finite Element Explicit Joint Model." Arindam Dey (PI) and Sreedeep S (Co-PI)

- Performed landslide assessment and designed of vulnerable rock slope in the Garhwal Himalaya considering dynamic response of jointed rock slope due to seismic event.
- Identified effect of seismic amplification on the stability of jointed rock slope.

IIT Guwahati Research Program (2015-2016), "Influence of drainage characteristics of Nonwoven Geotextile on the performance of a Reinforced Soil Wall comprising Unsaturated Marginal Backfill." Arindam Dey (PI)

- Investigated transient seepage flow of water in unsaturated soil Geotextile medium due to rain water infiltration and identified capillary barrier effect of Geotextile in reinforced soil wall.
- Developed finite element numerical model to evaluate coupled hydromechnical response of unsaturated marginal backfill reinforced with Nonwoven Geotextile.

Consulting Experience

Development Consultants Private Limited, Kolkata (2014-2015)

2 X 600 MW Supercritical Thermal Power Plant, Phase-1, Long Phu-Song Hau PPP Management Board, Vietnam

- Investigated detailed subsurface of the site.
- Designed pile foundation for main Power-house building.

Coal Fired Thermal Power Plant, Tata Projects Limited, India

- Calculated wind load of Deaerator building.
- Assisted in designing main Scrubber house building

Coal Fired Thermal Power Plant, Gujrat State Electricity Corporation Limited, India

- Reviewed structural design of main Power house building.
- Assisted in designing canteen building.

Coal Fired Thermal Power Plant, Durgapur Projects Limited, India

- Reviewed and assisted structural design of main Power house building.
- Reviewed bar bending schedule of coal transfer point.

Teaching and Mentoring Experience

Since Joining Oregon State University

Undergraduate Student Researchers

Erick Moreno Rangel (2017-2020)

- Geotechnical characterization of silts and sands.
- Determination of the Atterberg limits, fines content, sieve analysis, hydrometer analysis.
- Monotonic and cyclic Direct Simple Shear testing of undisturbed fine grained soil.
- Calibration of vibration sensor for *in-situ* dynamic testing.

Rachael Gromen, REU student (Summer 2019)

- Identification of five sites in Christchurch, NZ which had experienced different degree of liquefaction during Canterbury earthquake sequences.

Arren Padgett (Summer 2019)

- Determination of the Atterberg limits, fines content, sieve analysis, hydrometer analysis.
- Calibration of vibration sensor for *in-situ* dynamic testing.

Prior to Joining Oregon State University

Master Student Researchers, IIT Guwahati

Aswathi C.K. (2016-2017)

- Stability assessment of reinforced rock slope based on two-dimensional finite element approach.
- Published a conference proceeding.

Anangsha Alammyan and Seema Pegu (Fall 2016)

- Develop a methodology to model effective two dimensional plane strain analysis of jointed rock slope.
- Published a conference proceeding.

Naveen Reddy Kallam and Manash Jyoti Bora (Fall 2016)

- Stability assessment and designing of jointed rock slope using finite element method.
- Published a conference proceeding.

Abhishek Dixit and Arnab Kumar Pal (Fall 2016)

- Effect of Geological Strength Index on factor of safety of jointed rock slope.
- Published a conference proceeding.

Undergraduate Students, IIT Guwahati (2015-2016)

- Teaching Assistant in Basic Soil Mechanics and Geotechnical Engineering Laboratory.

Professional Membership and Service

2019 – Present	Member of Seismological Society of America
2019 – Present	Member of American Society of Civil Engineers (ASCE).
2018 – 2021	Vice President of Geo-Institute Graduate Student Organization, ASCE at Oregon State University.
2018 – Present	Member of Geotechnical Extreme Events Reconnaissance Team
2018 – Present	Earthquake Engineering Research Institute (EERI)

Professional Registration

Engineer in Training (EIT) Civil Engineering, State of Oregon
https://account.ncees.org/rn/2270342-1499542-264414f

Reviewer of Journal and Conference Proceeding

Geotechnical Testing Journal (ASTM)

Geocongress, American Society of Civil Engineers

Invited Presentations

1. **Jana, A.** (Presenter) and Stuedlein, A.W. "*Use of Controlled Blasting for the Evaluation of the Deep, In Situ Dynamic Response of Soils*," University of Washington, Washington, 12 April 2019.
2. **Jana, A.** (Presenter) and Stuedlein, A.W. "*Use of Controlled Blasting for the Evaluation of the Deep, In Situ Dynamic Response of Soils*," Oregon Stater Award, Portland Art Museum, Oregon, 21 February 2019.