**Curriculum Vitae**

**Section 0**

Candidate Name: Chung R. Song

Candidate Title: Associate Professor

Unit Name: Civil Engineering

Office Address: 362N, Prem S. Paul Research Center, 2200 Vine St. PO Box 830851

Email: csong8@unl.edu

Phone: (402) 472-1914

Narrative Description:

Dr. Chung R. Song was born in South Korea, 1961. He obtained a BSc degree from Yonsei University, Seoul, Korea, in 1984. In Yonsei University, Korea, he was qualified as a first-class civil engineer during his senior year.

In 1986 he obtained his MSc degree from The University of Texas at Austin, with his research in Soil Dynamics. From 1987 to 1988, he served in Korean Army. While working for Sun Jin Engineering Co. Ltd. and Daewoo Engineering Co. Ltd. from 1988 to 1996, he worked on many national and international projects as a senior design and field geotechnical engineer. In 1993 he obtained PE qualification in Korea. He has published more than 150 technical articles, three book chapters, and two books. In addition, he served as an invited speaker for the Korean Geotechnical Society in geotechnical instrumentation and soft soil improvement areas.

In August 1996, he joined the graduate program at Louisiana State University. He defended his dissertation in 1999 on the analytical research on the coupled interaction between the saturated soils and Piezocone Penetration device. After his Ph. D. degree, Dr. Chung R. Song worked for Sambo Engineering Co. Ltd. as a director of the Tunnels and Infrastructure Division. In 2001 Dr. Chung Song was qualified as an APEC Engineer that is an international professional engineer recognized in more than 20 countries that include the US.

With his diverse experience in many aspects of Geotechnical Engineering, Dr. Song’s specialty areas include multi-physics (Hydro-Electro-Kinetic-Mechanical Coupled Mechanics), multi-scale (Quantum-Molecular-Micro-Macro Coupled Mechanics), field soil improvement, field and laboratory soil testing, and field instrumentations. Again, with his diverse career, Dr. Song is also active in professional societies such as ASCE-EMI, ASCE-GI, Korean Geotechnical Society, and Korean Geotechnical Society – North America. Currently, Dr. Chung R. Song teaches geotechnical engineering at The University of Nebraska-Lincoln as an associate professor.

**Section 1 Education and Employment History**

**Section 1.1 Education History: Degrees received, Institutions and Dates**

Ph.D. in Civil Engineering, December 1999, Louisiana State University

(*The Computational Approach for the Determination of Hydraulic Conductivity of Soils Using Continuous Intrusion Piezocone Penetrometer*, Supervisor: George Z. Voyiadjis, Co-Supervisor: Mehmet T. Tumay)

MS in Civil Engineering, December 1986, The University of Texas at Austin

BS in Civil Engineering, December 1984, Yonsei University, Seoul, Korea

**Section 1.2 Employment History: Employer, Position, Dates**

The University of Nebraska Lincoln - Lincoln, Department of Civil Engineering, Associate Professor, 8/15 – Present.

The University of Mississippi, Department of Civil Engineering, Associate Professor, 8/09 – 8/15.

Yonsei University, Seoul, Korea, Department of Civil Engineering, Visiting Professor, 1/13 – 8/13.

The University of Mississippi, Department of Civil Engineering, Assistant Professor, 8/04 – 8/09.

Louisiana State University, Department of Civil Engineering, Professional in Residence, 7/02 – 7/04.

Sambo Engineering Co. Ltd., Tunnel and Infrastructure Division, Senior Director/Vice President, 01/01 – 08/02.

Louisiana State University, Post Doctoral Research Associate, Department of Civil Engineering, 01/00 – 12/00.

Louisiana State University, Graduate Assistant, Department of Civil Engineering, 01/98 – 12/99.

Sinwoo Engineering, Co. Ltd., Senior Engineer, Geotechnical Engineering Division, Seoul, Korea, 06/96 – 12/97. (part time)

Daewoo Engineering, Co. Ltd., Senior Engineer, Geotechnical Engineering Division, Seoul, Korea, 04/90 – 05/96.

Sungin Engineering, Co. Ltd., Lead Engineer, Geotechnical Engineering Division, Seoul, Korea, 10/88 – 03/90

Korean Army, Corporal, 04/86 – 10/88

**Section 2 Research Accomplishments**

**Section 2.1 Publication Record**

**Section 2.1.1 Numbered list (in reverse chronological order) of Peer Reviewed Journal Publications**

1. Bekele, B, Song, C.R., Jin, G., Sawyer, B. and Lindemann, M., “Fast Estimation of Hydraulic Conductivity for Overconsolidated Soils Using Piezocone Test Results”, Infrastructure, MDPI, https://doi.org/10.3390/infrastructures6030032
2. Song C.R. and Kim Jinwon (2020), “Estimation of Hydraulic Conductivity of Soils Based on Biot’s Theory of Wave Propagation”, J. of KGS, 36(12), 7-16, <https://doi.org/10.7843/kgs.2020.36.12.7>.
3. Song C.R., Cheng A.H-D., Ostaz A. and, Mantena R. (2020), “Lessons Learned from Hurricane Katrina – With Emphasis on Cost Effective Retrofitting Techniques”, J. of ENU, https://doi.org/10.32523/2616.7263
4. Chung R. Song, Binyam Bekele, Alex Silvey, Mark Lindemann and Lucas Ripa (2020), “Piezocone/cone penetration test-based pile capacity analysis: calibration, evaluation, and implication of geological conditions”, IJGE, DOI: 10.1080/19386362.2020.1778214
5. Chung R. Song, Binyam M. Bekele and Alexander Silvey (2019), “Pore Pressure Response of Overconsolidated Soils in a Partially Drained Piezocone Penetration Test,” J. of Engineering Mechanics, ASCE, DOI: 10.1061/(ASCE)EM.1943-7889.0001594
6. Chung R. Song, Alexander H.-D. Cheng and Ahmed Al-Ostaz, David Admirral (2018), “Influence of Thickness of Planar Nozzles and Aeration on Erosion Depth of Levee Soils,” International Journal of Sediment Research, DOI: 10.1016/j.ijsrc.2018.04.010
7. Tewodros, Y, Yosef, Chung R. Song and Ki-Tae Chang (2017), “Hydro-Thermal Coupled analysis for Health Monitoring of Embank Dams,” Acta Geotechnica, DOI: 10.1007/s11440-017-0571-z
8. Song, C.R., Adhikari, S., Al-Ostaz A. and Cheng A.H.-D. (2017), “Development of Deformation Criteria for Predictive Monitoring System for Levees,” International Journal of Geotechnical Engineering, DOI: 10.1080/19386362.2017.1358527
9. C.R. Song and T. W. Yosef (2017), “Seepage Monitoring of an Embankment Dam Based on Hydro-Thermal Coupled Analysis,” J. of Engineering Materials and Technology, 139(2), DOI: 021024-1-9.
10. C.R. Song, S. Adhikari and J.T. Kidd (2016), “Self-Sealing Bentonite Strip – an Effective Method to Prevent Gap Development for Floodwalls in New Orleans,” International Journal of Geotechnical Engineering, DOI: 10.1080/19386362.2015.1130923
11. S. Adhikari, C.R. Song and A.H.-D. Cheng (2015), “Anisotropic analysis of I-walls in New Orleans,” Marine Georesources and Geotechnology, DOI: 10.1080/1064119X.2013.877108.
12. Sudarshan Adhikari and Chung R. Song, Alexander H.-D. Cheng (2013), “Evaluation of I-wall in New Orleans with back-calculated total stress soil parameters”, Acta Geotechnica, DOI: 10.1007/s11440-013-0264-1 (ISSN 1861-1125, 1861-1133).
13. Chung R. Song, Sudarshan Adhikari, Ahmed Al-Ostaz and Alexander Cheng, (2013), “Reevaluation of the “Gap Formation” in New Orleans Levee System”, J. of Geotechnical and Geoenvironmental Engineering, ASCE DOI: 10.1061/(ASCE) GT.1943-5606.0001024 (ISSN 1090-0241).
14. ASCE/EWRI Task Committee on Dam/Levee Breaching, (2011), “Earthen Embankment Breaching”, J. of Hydraulic Engineering, ASCE, 1549-1564.
15. J.T. Kidd, C.R. Song, A. Al-Ostaz, A. H.-D. Cheng, and W. Jang (2011), “Erosion Control Using Modified Soils,” Int. Journal of Erosion Control Engineering, 4(1), 1-9.
16. Won, J.O., Song, C.R. Al-Ostaz A. and Cheng, A.H.D. (2011), “Evaluation of T-Wall in New Orleans Considering 3D Soil Structure Interaction,” J. of Geotechnical and Geoenvironmental Engineering, ASCE, 137(8), 731-742.
17. Jang, W.G., Song, C.R., Kim, J.W., Cheng, A.H.-D. and Al-Ostaz, A. (2011), “Erosion Study of New Orleans Levee Materials Subjected to Plunging Water,” J. of Geotechnical and Geoenvironmental Engineering, ASCE,137(4), 398-404.
18. Wu, W., Al-Ostaz, A., Cheng, A.-H.D. Cheng and Song, C.R. (2011), “Computation of elastic properties of Portland cement using molecular dynamics,” Journal of Nanomechanics and Micromechanics, ASCE, 1(2).
19. Song, C.R., Kim, J.W., Wang, G. and Cheng, A.H.-D. (2011), “Reducing Erodibility of Earthen Levee Using Engineered Flood Wall Sections,” J. of Geotechnical and Geoenvironmental Engineering, ASCE, 137(10), 874-881.
20. Wu, W., Al-Ostaz, A. Cheng, A.H.-D. and Song, C.R. (2010), “Concrete as a Hierarchical Structural Composite Material,” International Journal of Multiscale Computational Engineering, 8(6), pp.585-595.
21. Song, C.R. and Pulijala, S., (2010), “Hydraulic Conductivity Estimation Using Piezocone Results,” J. of Geotechnical and Geoenvironmental Engineering, ASCE, 136(3), 2010, 456-463.
22. Al-Ostaz, A., Wu, W., A.H.-D. Cheng, and Song, C.R. (2010), “A Molecular Dynamics and Microporomechanics Study on the Mechanical Properties of Major Constituents of Hydrated Cement,” Journal of Composites: B, 41, 543-549.
23. Song, C. R. and Kim, J. W. (2008), “Estimation of Soil Permeability Using an Acoustic Technique,” J. of Geotechnical and Geoenvironmental Engineering, ASCE, 134(12). 1829-1832.
24. Kim, J.W. and Song, C.R. (2008), “Laboratory Evaluation of Soil Permeability for Sand Using Biot’s Acoustic Wave Propagation Theory,” Journal of KGS. 24(8), 5-12.
25. Voyiadjis, G.Z. and Song, C.R. (2005), “A Coupled Micro-Mechanical Based Model for Saturated Soils,” Mechanics Research Communications, 32(5), 490-503.
26. Song, C.R. and Voyiadjis, G.Z. (2005), “Pore Pressure Response around a Penetrating Object,” Computers and Geotechnics, 32, 37-46.
27. Voyiadjis, G.Z. and Song, C.R. (2003), “Determination of Hydraulic Conductivity Using Piezocone Penetration Test,” International Journal of Geomechanics, ASCE, 3(2), 217-224.
28. Voyiadjis G.Z. and Song, C.R. (2002), “Multi-Scale Non Local Approach for Geomaterials,” Mechanics Research Communications, 29 (2-3), 121-129.

# Song, C.R. and Voyiadjis, G.Z. (2002), “Microstructure Consideration with Plastic Spin for Large Strain Problems in Soils,” International Journal of Plasticity, 18, 1271-1289.

1. Song, C.R. (2000), “Experimental and Theoretical Consideration of Liquid Limit,” Journal of Korean Geotechnical Society, 16(3), pp.29-37.
2. Voyiadjis, G.Z. and Song, C.R. (2000), “Finite Strain, Anisotropic Modified Cam Clay Model with Plastic Spin – Part II: Application,” J. of Engineering Mechanics, ASCE, 126(10), 1020-1026.
3. Voyiadjis, G.Z. and Song, C.R. (2000), “Finite Strain, Anisotropic Modified Cam Clay Model with Plastic Spin – Part I: Theory,” J. of Engineering Mechanics, ASCE, 126(10), 1012-1019.
4. Song, C.R., Voyiadjis, G.Z. and Tumay, M.T. (1999), “Determination of Permeability of Soils Using Multiple Piezo-element Penetrometer,” International Journal for Numerical and Analytical Methods in Geomechanics, 23(13), 1609-1629.
5. Song Chung Rak and Kim Soo Il (1992), "Effects of High Amplitude Prestraining Vibrations on Shear Modulus of Sands", J. of Korean Geotechnical Society, 8(1), 19 – 28.
6. Song Chung Rak and Stokoe K.H.II (1991), "Dynamic Properties of Soils at High Amplitude (with emphasis on threshold strain)", J. of Korean Geotechnical Society, 7(2), 11 – 18.
7. Kim Kyo Won, Kang Ki Young and Song Chung Rak (1991), "Causes and Measures for Un-Hardening Phenomenon of Soil Cement Mixing Wall in Organic Soil", J. of Korean Society of Engineering Geology, 1(1), 11 – 18.
8. Song Chung Rak and Kim Soo Il (1988), “Properties of Silty Sands at High Amplitude (with emphasis on basic properties),” J. of Geotechnical Engineering, Korean Geotechnical Society, 4(3), 27-33.
9. Song Chung Rak and Kim Soo Il (1987), “Effects of High Amplitude Prestraining on Dynamic Properties of Silty Sands,” J. of Geotechnical Engineering, Korean Geotechnical Society, 3(2), 7-16.

**Section 2.1.2 Numbered list (in reverse chronological order) of Peer Reviewed Journal Publications submitted for review but not yet accepted or accepted with “re-review required” or equivalent.** Include the name of journal, author list, date submitted and % of your contribution.

1. B. Bekele, C. Song and M. Lindemann, “International Journal of Geoengineering Case Histories”, ISSMGE
2. Song, C.R., Al-Ostaz, A., Cheng, A.H.-D., Wipawi, V.-E., Sawyer, B. “Evaluation of I-walls in New Orleans Based on Centrifuge Test Results,” J. of Geotechnical and Geoenvironmental Engineering, ASCE
3. C. Song, S. Amelian, L. Bitar, YR Kim, M. Lindemann, “Soil Stabilization with biopolymer additive for Shales and Glacial tills in Midwestern States in USA”, J. of Geomechanics and Engineering (60%)

**Section 2.1.3 Numbered List (in reverse chronological order) of Books and Book Chapters, author list, publisher, year**

**Books**

1. Voyiadjis, G. Z. and Song, C.R. (2006), *Coupled Theory of Mixtures in Geomechanics with Application*, 438p. Springer
2. Song Chung Rak (1996), *Fundamentals of Soil Dynamics*, Engineers Book Publishing Co. 426p, (Korean Version of Fundamentals of Soil Dynamics by Braja.M. Das) (in Korean)

**Book Chapters**

1. Korean Society of Rock Engineering (2007), *Slope Engineering (Chapter 13)*, Construction Information Publishing, 525p.
2. Degroot, D.J., Vipulandan, C., Yamamuro, J.A., Kaliakin, V.N., Lade, P.U., Zeghal, M., El-Shamy, U., Lu, N., Song, C.R. (2007), *ASCE Geotechnical Special Publication (GSP) 173,* CD-Rom
3. Song, C.R. and Voyiadjis, G.Z. (2003), “Multiscale Nonlocal Approach for Geomaterials,” *Constitutive Modeling of Geomaterials-* *Selected Contributions from the Frank L. DiMaggio Symposium*, CRC Press, pp.145-151
4. Song Chung Rak (1995), *Safety Evaluation Technique for Infra-structures*, Korea Infra-structure Safety Institute
5. Song Chung Rak (1995), "Case History of the Field Monitoring Results of Soft Soil", *Text Book of the Annual Lecture of Korean Geotechnical Society*, p.492 – 529

**Section 2.1.4 Numbered list (in reverse chronological order) of Conference Proceedings:** Peer reviewed extended abstract or peer reviewed paper.

1. C.R. Song and B. Bekele (2019), “Numerical simulation of drained Piezocone penetration tests for saturated clayey soils to obtain strength of soils at residual-wet-drained condition,” EMI2019, CD-Rom, Caltech, CA
2. C.R. Song and B. Bekele (2019), “Behavior of Saturated Cohesionless Soils to High Speed Cone Penetration,” EMI2019, CD-Rom, Caltech, CA
3. C.R. Song (2018), “Field Instrumentation and Real-Time Feedback during Construction of Incheon International Airport,” UKC2018, Invited Talk
4. C.R. Song, A. Al-Ostaz and R. Mantena (2018), “Detailed Performance Analysis of Levees ad Floodwalls in New Orleans during Hurricane Katrina,” ARMA 18-244, 52nd US Rock Mechanics-Geomechanics Symposium 2018, Seattle, WA
5. Binyam Bekele, Chung R. Song, Brian D. Sawyer, Mark Lindemann and Gyunam Jin (2018), “Estimation of Hydraulic Conductivity for Overconsolidated Clays Based on PCPT Results,” EMI2018
6. K. Koocheki and C. Song (2018), “Plastic Behavior of Fused Silica in Nanoindentation Testing,”, EMI2018
7. C.R. Song, A.H.-D. Cheng, A. Al-Ostaz and R. Mantena, (2018), “Lessons Learned from Hurricane Katrina – With Emphasis on Cost Effective Retrofitting Techniques”, The 2nd US-KGS Workshop, GeoCongress2018, Orlando, FL
8. T.Y. Yosef, C.R. Song, R. K. Faller and K.A. Lechtenberg (2017), “Coupled Soil-Structure Behavior Under Impact Load,” EMI2017, Flash Drive
9. C.R. Song, Jongwan Eun and Seunghee Kim (2017), “Hydro-Electro-Thermo-Chemico-Mechanically Coupled Equations and Soil Behavior,” EMI2017, Flash Drive
10. C.R. Song, T. Y. Yosef2, M. Asadollahipajouh and R. Faller (2017), “Impacts Resistance of Guardrail Posts on Sloped Ground,” IRS2017 Conference, San Francisco, Flash Drive
11. C.R. Song and T.Y. Yosef (2016), “Multi-Physics Technique in Geotechnical Engineering,” UKC2016 Conference
12. Chung R. Song (2016), “20 Year Old Real-Time Sensor and Management Systems,” EMIPMC2016-CD Rom
13. Chung R. Song, and Tewodros Y. Yosef2 (2016), “Hydro-Thermal Coupled Multiphysics Simulation for Health Monitoring of Embankment Dam,” EMIPMC2016-CD Rom
14. Chung R. Song and Tewodros Y. Yosef2 (2016), “Seepage Monitoring of an Embankment Dam Based on Hydro-Thermal Coupled Analysis,” Multi-Physical Solutions for Harsh Environments: Computations and Experiments, International Symposium in honor of Professor George Z. Voyiadjis, Seoul, Korea, p21
15. Wodajo3, L., Hickey, C.J. and Song, C. (2015), “Application of cross-plot analysis on a levee using time lapse seismic refraction tomography and electrical resistivity tomography, The Joint Federal Agency Conference, Reno, NV, 12pp.
16. C. R. Song and T. Yosef2 (2015), "Seepage-Heat Coupled Analysis for Estimating Phreatic Line of an Earth Dam from Temperature Profile," SAGEEP 2015, Extended Paper, CD-Rom
17. Wodajo3, L., Song, C. R. and Hickey, C. (2015), "Assessment of the Francis Levee Site Using Multiple Geophysical Surveys and Cross-plot Analysis," SAGEEP 2015 Conference, Austin, TX CD-Rom
18. C.R. Song, T.Y. Yosef1, Y. Najjar and A.H.-D. Cheng (2014), "Seepage-Heat Coupled Analysis for Estimating a Phreatic Line of an Earth Dam," EMI 2015 Conference, McMaster University, Canada. CD-Rom
19. Leti Wodajo3 Craig J. Hickey, Gregory Hanson, and Chung Song, “Enhancement of SRT and ERT Interpretations using Time-lapse Measurements and Cross-plot Analysis.” EAGE Near Surface Geoscience 2014 conference, Athens, Greece September 14-18, 2014.
20. Corey A. Hamil2, Craig J. Hickey, and Chung R. Song, “An Investigation of Lake Okhissa Dam’, Symposium on the Application of Geophysics to Engineering and Environmental Problems (SAGEEP), March 16 - 20, 2014, Boston, Massachusetts.
21. Chung R. Song, Ahmed Al-Ostaz and Alexander H.-D. Cheng (2013), “Expansive Clay Minerals and Hurricane Katrina,” 5th Biot Conference, 2013, CD Rom
22. Song, C.R. and Voyiadjis, G.Z. (2013), "Analytical Observations of Micro-mechanical in Plasticity for Saturated Soils," International Symposium on Plasticity, Bamaha, CD-Rom
23. Kidd1, J.T., C.R. Song, and A.H.-D. Cheng (2012), “Enhancing Erosion Resistance of Levee by Ground Modification,” Proceedings of USSDAM 2012 Conference, New Orleans, CD-Rom
24. C.R. Song and J. Jackson1 (2012), “Bridging Techniques for I-Wall System to Mitigate Local Failure,” Proceedings of USSDAM 2012 Conference, New Orleans, CD-Rom
25. Wodajo2, L., Hickey, C.J., Hanson, G. and Song, C.R. (2012)” Time-Lapse Seismic Tomography and Dynamic Poisson’s Ratio Maps of a Small Embankment Dam with Possible Zones of Weakness ” Symposium on Applications of Geophysics to Environmental and Engineering Problems, April 10-14.
26. L.T. Wodajo2, C.J. Hickey, G.J. Hanson and C.R. Song (2011), "Time-Lapse Seismic Tomography of a Small Embankment Dam with Possible Zones of Weakness," SAGEEP 2011, Charleston, SC, CD-Room
27. Song C.R., Al-Ostaz A. and Cheng A. H.-D. (2011), “Hurricane Damage on Flood Protection System and Multidisplinary Countermeasure,” ASCE-EMI 2011 Conference, North Eastern University, MA
28. Wodajo2, L.T., Hickey, C.J., Hanson, G. and Song, C.R. (2011), "The use of seismic tomograms for the identification of internal problems with earthen dams and levees," 9th Meeting of the Mid-South Chapter of the Acoust. Soc. Am., Conway, AR, Oct 7-8.
29. Adhikari2 S., Song C.R., Cheng A. H.-D. (2011), “Implementation of the anisotropic elastoplastic model in FLAC3D and its application in the numerical simulation of New Orleans levees and floodwall section,” ASCE-EMI 2011 Conference, North Eastern University, MA
30. Song C.R., Jang2 W., Kim2 J.W., Cheng A. H.-D. and Al-Ostaz A. (2011), “New Orleans Specific Erosion Mechanism of Levee Soils”, Workshop on Dam Stability, Safety and Failure, Oxford, MS
31. Jang2 W., Song C.R., Kim2 J.W., Cheng A. H.-D. and Al-Ostaz A. (2010), “Effects of Soil Parameters on Erosion Behavior of New Orleans Soils , ASCE-EMI 2010 Conference, USC, CA, CD-Rom
32. Kim2 J.W., Song C.R., Wang3 G. and Cheng A.H.-D. (2010), “Erosion Control of Earthen Levees Using Energy Absorbing Surfaces,” ASCE-EMI 2010 Conference, USC, CA, CD-Rom
33. Adhikari2 S, Song C.R., Cheng A. H.-D. and Al-Ostaz A. (2010), “Evaluation of I-wall in New Orleans with calibrated soil parameters,” ASCE-EMI 2010 Conference, USC, CA, CD-Rom
34. Won2 J., Song C.R., Adhikari2 S., Cheng A. H.-D. and Al-Ostaz A. (2010), “3-D Assessment of a T-wall System in New Orleans, ASCE-EMI 2010 Conference, USC, CA, CD-Rom
35. Kidd1 T., Song C.R., Cheng A. H.-D and Jang1 W. (2010), “Erosion Control by Ground Modification, ASCE-EMI 2010 Conference, USC, CA, CD-Rom
36. Song C.R., Jang1 W., Cheng A. H.-D. and Al-Ostaz A. (2010), “Prediction of Field Erosion Depth for New Orleans Levee Soils, ASCE-EMI 2010 Conference, USC, CA, CD-Rom
37. Wang3 G., Song, C.R., Kim2, J. and A. H.-D. Cheng (2009), “Numerical Study of Erosion of Loose Sand from an Overtopped Plunging Jet,” Joint ASCE-ASME-SES Conference on Mechanics and Materials, June 24-27, 2009, Virginia Tech, Blacksburg, VA.
38. Song, C.R., Adhikari2, S., Wu2, W.D. and Al-Ostaz, A. (2008), “Effects of Force Fields in Simulating Nano- to Subnano- level Geo-Materials,” Proceedings of The first American Academy of Mechanics Conference
39. Adhikari2, S., Song, C.R. and Al-Ostaz, A. (2008), “Cell Size Effects in Predicting Properties of Soils and Cement Using Quantum Mechanics and Molecular Mechanics,” Proceedings of The first American Academy of Mechanics Conference
40. Kim1, J.W. and Song, C.R*.* (2008), “Acoustical Estimation of Soil Permeability,” Proceedings of The 3rd International Conference on Site Characterization, April 1 -3, Taipei, Taiwan, CD-Rom
41. Song, C.R. and Pulijala1, S. (2008), “Quick Estimation of Hydraulic Conductivity,” Proceedings of The 3rd International Conference on Site Characterization, April 1 -3, Taipei, Taiwan, CD-Rom
42. Kim1, J.W. and Song, C.R. (2008), “Determination of Soil Characteristic Frequency Using Acoustic Techniques,” Proceedings of GeoCongress 2008, ASCE GSP 179, pp.332-339
43. Song, C.R. and Jang2 ,W.G. (2008), “Cell Size Effects in Characterizing Dry Quartz Sand Particles,” Proceedings of GeoCongress 2008, ASCE GSP 179, pp.998-1005
44. Song, C.R. and Wu2, W.D. and Al-Ostaz, A. (2008), “Effects of Force Field in Molecular Mechanics Simulation of Geo-Materials,” Proceedings of GeoCongress 2008, ASCE GSP 179, pp.1012-1019
45. Chung R. Song, Jin W. Kim1, Alexander H.-D. Cheng, and Craig Hickey (2007), “Measurement of Biot Characteristic Frequency for Saturated Soils,” *EMD 18th 2007*, ASCE, VA
46. Song, C.R., Cho1, H., Jung, Y-H., Cheng, A. H.-D. and Al-Ostaz, A. (2007), “Bridging Molecular, Particulate and Continuum Mechanics for Geomechanics Application,” GeoDenver 2007, CD-Rom
47. Song, C. R. and Kim1, J. W. (2007), “Determination of Soil Permeability Using an Acoustic Technique,” GeoDenver 2007, CD-Rom
48. Song, C.R. and Pulijala1, S. (2006), “Hydraulic Conductivity Interpretation Using Piezocone Results,” ASCE Geotechnical Special Publication No. 149, Proceedings of GeoShanghai, pp. 32-39
49. Pal, G., Al-Ostaz, A., Mantena, R.R., Cheng, A.H-D. and C.R. Song (2006), “Molecular Dynamics Simulation of SWCNT - Polymer Nanocomposite and Its Constituents,” 21st technical conference of the American Society of Composite materials
50. Song, C.R. and Al-Ostaz, A. (2005), “Implementation of Molecular Dynamics in Continuum Geo-mechanics,” Prodeedings of McMat 2005 Conference, June, CD-Rom
51. Song, C.R. and Cheng, A. H.-D. (2005), “Evaluation of Acoustic Wave Techniques for Determining Hydraulic Conductivity of Geomaterials,” Prodeedings of McMat 2005 Conference, June, CD-Rom
52. Srinivasan, P., Ghanshyam P., Al-Ostaz, A., Raju Mantena P., Jao E., and Song, C. R. (2005), “Evaluation of Nano Composite Constituent Properties Using Multiple Scale Models,” McMat conference, Baton Rouge, LA, CD-Rom
53. Song, C.R. and Voyiadjis, G.Z. (2005), “Two different rate dependencies of saturated clayey soils,” Poromechanics-Biot Centennial (1905-2005)-Abousleiman, Cheng & Ulm (eds), Taylor & Francis Group, London, pp.713-718
54. Voyiadjis, G.Z. and Song, C.R. (2005), “A coupled micro-mechanical model for saturated soils,” Poromechanics-Biot Centennial (1905-2005)-Abousleiman, Cheng & Ulm (eds), Taylor & Francis Group, London, pp.719-724

##### Song, C.R. and Yeoh, Y.H. (2004), “Assessment of Dam Safety from Field Monitoring Results,” GEO’2004, ASCE, Geotechnical Practice Publication No. 1, pp.86-93

##### Song, C.R. and Voyiadjis, G.Z. (2002), “Micro-mechanics in Soils and Shear Bands”, 15th ASCE Engineering Mechanics Division Conference, Columbia Univ., New York, New York, June 2-5th, CD-Rom

1. Song, C.R. and Voyiadjis, G.Z. (2002), “Non Local Approach for Geomaterials,” Proceedings of ASEM’02, Busan, Korea, CD-Rom publication

##### Song, C.R. and Voyiadjis, G.Z. (2001), “Rate dependent gradient theory for shear band analysis in clayey soils”, ASME/ETCE ‘2001 Conference, CD-Rom

##### Song, C.R. and Voyiadjis, G.Z. (2001), “Pore Pressure from Penetrometer and Hydraulic Conductivity”, 15th International Conference on Soil Mechanics and Geotechnical Engineering, Istanbul, Turkey, pp.279-282

1. Song, C.R. and Voyiadjis, G.Z. (2001), “Plastic Spin and Gradient Theory for Modeling Large Strain Behavior of Soils”, Proceedings of 10th International Conference of The International Association for Computer Methods and Advances in Geomechanics, pp.597-600
2. Voyiadjis, G.Z. and Song, C.R. (2001), “Rate Dependency and Gradient Theory for Shear Band Analysis”, Proceedings of 10th International Conference of The International Association for Computer Methods and Advances in Geomechanics, pp.601-606
3. Park, Y.J., Lee, S.C. and C.R. Song (2001), “Rockmass Classification Using Multiple Indicate Kriging”, Proceedings of Korean Society of Civil Engineers, November, CD Rom
4. Chun, T.H., Choi, W.J., Park, J.S. and Song, C.R. (2001), “Facts and Fictions in Geotechnical Surveys for Subway Design,” Proceedings of Korean Society of Civil Engineers, November, CD Rom
5. Song, C.R. (2001), “Constitutive Relations for CPT and SPT,” Proceedings of Korean Geotechnical Society for Specialty Conference for Geo-modeling and Non-Linear Behavior, September, pp.125-145
6. Song, C.R. (2001), “Estimation of Hydraulic Conductivity Using Excess Pore Pressures During Piezocone Penetration Test,” International Committee for Soil Mechanics and Geotechnical Engineering, ATC-7 Committee, Busan, Korea, September,pp.221-231
7. Song, C.R. (2001), “Total Geotechnical Instrumentation Based on Smart Materials,” Proceedings of Korean Geotechnical Society for Specialty Conference of Geotechnical Instrumentation, October, pp. 79-88
8. Song, C.R., Jun, S.K., Yeo, Y.H. and Han, Y.C. (2001), “A Case Study of a Slope Failure and Slope Stabilization,” Korean Geotechnical Society National Conference, Committee of Slope Stability, Wonju, May, pp.123-133
9. Voyiadjis, G.Z. and Song, C.R. (2000) “Microstructural Characterization in Modeling Large Strain Behavior of Soils,” Plastic and Viscoplastic Response of Materials and Metal Forming, Proceedings of Plasticity ‘00, Neat Press, pp. 110-112

# Song, C.R. and Voyiadjis G.Z. (2000), “Effects of Incorporating Plastic Spin to Flow Characteristics in Clayey Soils,” Proceedings of EM’2000, ASCE, May 21-24th, Austin Texas, CD Rom

1. Voyiadjis, G.Z. , Song, C.R. and Tumay, M.T. (1999), “Real Time Continuous Profiling of Hydraulic Conductivity of Geo-materials Using the Piezocone Penetration Test,” 5th US National Congress on Computational Mechanics, August 4-6, Boulder, CO, p.502
2. Song, C.R. and Voyiadjis, G.Z. (1999), “A New Method for Determining the Permeability of Soils Using the Piezocone Penetration Test,” Proceedings, 13th ASCE Engineering Mechanics Div. Baltimore, June 13-16, Johns Hopkins University, Baltimore, MD, CD Rom
3. Song Chung Rak (1996b), "Fact and Fiction in Field Instrumentation (Part III: Pore Pressure Measurement)," Proceedings of the KGS Spring '96 National Conference, pp.221 – 234
4. Song Chung Rak (1996a), "Fact and Fiction in Field Instrumentation (Part II: Settlement Measurement)," Proceedings of the KGS Spring '96 National Conference, pp.205 –220
5. Song Chung Rak (1995), "Fact and Fiction in Field Instrumentation (Part 1: Horizontal Displacement Measurement)," Proceedings of the KGS Fall '95 National Conference, pp.III.1 - III.8
6. Han Young Chul, Song Chung-Rak, Yoon Dong Duk and Lee Kyung Soo (1995), "Automatic Field Monitoring and Analysis System for Soft Soils," Proceedings of the KGS Fall '95 National Conference, pp.III.9 - III.14
7. Song Chung Rak, Yeoh Yoo Hyeon and Kim Sung In (1995), "Evaluation of the Behavior of Dam Body by Field Monitoring Results (I. With Emphasis on Pore Pressure and Seepage Water)," Proceedings of the KGS Fall '95 National Conference, pp.III.23 – III.30
8. Yeoh Yoo Hyeon and Song Chung Rak (1995), "Evaluation of the Behavior of Dam Body by Field Monitoring Results (II. With Emphasis on Deformation)," Proceedings of the KGS Fall '95 National Conference, pp.III.31 - III.40
9. Yoon Dong Duk and Song Chung Rak(1995),"Expansion Characteristics of Bentonite Plug for Piezometer," Proceedings of the KGS Fall '95 National Conference, pp.III.41 - III.46
10. Song Chung Rak, Oh Da Young, Kim Soo Sam, Chun Byung Sik (1993), "Consolidation Characteristics by Field Monitoring," The 1st International Conference on Soft Soil Engineering, Guangzhou, China, pp.584 – 589
11. Song Chung Rak (1993), "Dynamic Properties of Municipal Land Fills Subjected to Dynamic Compaction," Proceedings of Specialty Conference on Soil Dynamics, Korean Geotechnical Society, pp.83 – 116
12. Song Chung Rak and Han Wan Kyun (1993), "Damage of Structures from Nearby Dynamic Compaction," Proceedings of Specialty Conference on Soil Dynamics, Korean Geotechnical Society, pp.55 – 71
13. Song Chung Rak, Paek Seung Hoon and Oh Da Young (1992), "Assessment of Consolidation Characteristics by Field Instrumentation," Proceedings of KGS fall '92 National Conference. pp.121 – 130
14. Han Young Chul and Song Chung Rak (1992), “Deposition Properties of Dredged Materials of Kun-Jang Industrial Complex," Proceedings of KGS fall '92 National Conference. pp.61 – 64
15. Song Chung Rak, Paek Seung Hoon and Yeoh Yoo Hyeon (1992), "Settling and Consolidation Properties of Hydraulic Fill Materials of Yeochun Industrial Complex," Proceedings of KGS fall '92 National Conference. Pp.55 – 60
16. Song Chung Rak and Yeoh Yoo Hyeon (1991), "Analysis of Field Settlement by Personal Computer," Proceedings of KGS fall '91 National Conference, pp.332 – 347
17. Song Chung Rak, Park Kwang Joon and Yoo Tae Sung (1991), "Assessment of Carsington Dam Failure," Proceedings of KGS Fall '91 National Conference, pp.87 – 102
18. Song, C.R., Stokoe, K.H II, and Ni, S.H. (1989), “Use of torsional resonant column method to evaluate nonlinear dynamic properties of soil under repeated loads and anisotropic state,” Proceedings of 11th IRF World Meeting, Apr. 16-21, Seoul, pp.217-220

**Section 2.1.5 Numbered list (in reverse chronological order) of Conference Presentations.**

1. C.R. Song, L. Bitar and B. Bekele (2020), “Reducing Soil Erosion by Biopolymer,” KGS-NA workshop, Zoom
2. C.R. Song and B. Bekele (2019), “Numerical simulation of drained Piezocone penetration tests for saturated clayey soils to obtain strength of soils at residual-wet-drained condition,” EMI2019, Caltech, CA
3. C.R. Song and B. Bekele (2019), “Behavior of Saturated Cohesionless Soils to High Speed Cone Penetration,” EMI2019, Caltech, CA
4. Song, C.R., Yosef, T.Y., R. Faller and K. Lechtenberg (2017), “Numerical Evaluation of Soil-Pile Interaction During Crash,” 2017 TRB, Computational Mechanics Simulation Forum
5. Nathan T.M. and Song C.R. (2014), "Liquefaction Susceptibility of Soils in Desoto, Tate, and Tunica County, Mississippi," MAESC 2014
6. C.R. Song, A. Al-Ostaz and A.H.-D. Cheng, "Protection of Flood Protection System Using Multidisciplinary Countermeasures," 2012 ASCE-MS Section Conference, Biloxi, MS
7. Song, Chung Rak (2011), “Nano… in Civil Engineeering,” Civil Engineering, 59(9). 18-29 (invited article to Korean Civil Engineers Society)
8. Kidd T., Hosey M., Chung R. Song,Ahmed Al-Ostaz and A.H.-D. Cheng (2011), “Design of Bentonite apron to mitigate the gap development for levees in New Orleans during flooding season,” MAESC, Memphis, 2011
9. Adhikari, S., Song, C.R., Cheng, A.H.-D. and Al-Ostaz, A. (2011), “Incorporation of the anisotropic elastoplastic model in FLAC3D and its application in the numerical simulation of New Orleans Levees and Floodwall section,” MAESC, Memphis, 2011
10. Song C.R., Cheng A. H.-D and Al-Ostaz A. (2011) Hurricane Damage on Flood Protection System and Multidisplinary Countermeasure,” MAESC, Memphis, 2011
11. L.T. Wodajo, C.J. Hickey, C.R. Song and D. Wren (2011), “Use of Seismic Surveys for the Preliminary Investigation of Earthen Dams,” MAESC, Memphis, 2011
12. Jinwon, Kim and Chung R. Song (2011), "Estimation of soil properties based on seismoelectric conversion," MAESC 2011, Memphis, TN
13. Won, J. and Song C.R. (2009), “Three-Dimensional Analysis of T-type Floodwall in New Orleans,” Mid-South Area Engineering Sciences Conference, Memphis, TN, May 5, 2009
14. Adhikari, S. and Song C.R. (2009), “2-D Numerical Simulation of I-Wall for Retrofitting Design of Flood Protection Systems in New Orleans,” Mid-South Area Engineering Sciences Conference, Memphis, TN, May 5, 2009
15. Jang W. and Song C.R. (2009), “Development of Erosion Resistant Levee Retrofitting Material,” Mid-South Area Engineering Sciences Conference, Memphis, TN, May 5, 2009
16. Al-Ostaz, A., Cheng, A. H.-D., Mullen, C. and Song, C.R. (2009), “Aging Infrastructure: Evaluation, Repair, Improvement and Protection,” DHS Infrastructures Workshop; July 21-23, 2009 at Columbia University, New York, NY
17. Adhikari, S., Song, C.R., Cheng, A.H.-D. and Al-Ostaz, A. (2009), “Evaluation of the Structural Cap for the integrated and the resilient flood wall system of New Orleans,” Mississippi Branch American Society of Civil Engineers Conference, Vicksburg, MS
18. Jang, W., Song, C.R., Cheng, A.H.-D. and Al-Ostaz, A. (2009), “Developing Erosion Resistant Levee Materials and Estimation of Final Erosion Depth,” Mississippi Branch American Society of Civil Engineers Conference, Vicksburg, MS
19. Won, J., Song, C.R., Cheng, A.H.-D. and Al-Ostaz, A. (2009), “Evaluation of the safety of T-type flood wall in New Orleans using three-dimensional numerical analysis,” Mississippi Branch American Society of Civil Engineers Conference, Vicksburg, MS
20. Adhikari, S., Song, C.R., Cheng, A.H.-D. and Al-Ostaz, A. (2009), “Evaluation of structural cap for the integrated flood wall system of New Orleans,” Stabilization of Buildings Workshop in ERDC organized by DHS
21. Adhikari, S., Song, C.R., Cheng, A.H.-D. and Al-Ostaz, A. (2009), “Evaluation of I-wall in New Orleans with calibrated soil parameters,” Stabilization of Buildings Workshop in ERDC organized by DHS
22. Song, Chung Rak (2009), “Hurricane Katrina – Geotechnical Aspects of Failure Mechanisms,” Geotechnical Engineering Magazine by Korean Geotechnical Society (Invited Manuscript), May. 2009
23. Song Chung Rak (2008), “Pure Blood and Fused Blood in Geotechnical Engineering,” Geotechnical Engineering Magazine by Korean Geotechnical Society (Invited Article), Aug. 2008
24. Duddu, L., Hickey, C.J., and Song, C.R. “Seismic refraction tomography of a small earthen dam,” Mid-south Area Engineering and Science Conference Oxford, MS , May, 2007.
25. Jinwon Kim and Chung R. Song (2007), “Experimental Identification of Biot’s Characteristic Frequency for Loosely Packed Particulate Media,” *MAESC 2007*, MS, CD-Rom

**Section 2.1.6 Numbered list (in reverse chronological order) of Invited talks or Keynote Speeches**.

1. Song, C.R. (2019), “Multiphysics and multiscale approach in Geotechnical Engineering,” U.S.-Korea Geotechnical Workshop, Athens, Georgia, **Invited Talk**
2. Song, C.R., Woods, R. and Wittich, C. (2018), “Identification of slope movement based on surface LiDAR and surface imagery technique,” 53rd Annual Shallow Exploration Drillers Clinic, La Vista, Nebraska, **Invited Talk**
3. Seunghee Kim, Chung R. Song and Jongwan Eun (2017), “Hydro-thermo-chemico-kinetico-elasto-plastic coupled relations for soils,” EMI2017, **Keynote Speech** for Multiphysics and Multiscale Modeling of Engineering Materials, June 6, 2017
4. Chung R. Song and Tewodros Y. Yosef2 (2016), “Seepage Monitoring of an Embankment Dam Based on Hydro-Thermal Coupled Analysis,” Multi-Physical Solutions for Harsh Environments: **Invited Talk**, Computations and Experiments, International Symposium in honor of Professor George Z. Voyiadjis, Mar. 22, Seoul, Korea
5. Chung R. Song, Alexander, H.-D. Cheng and Ahmed Al-Ostaz (2013), “Lessons Learned from Hurricane Katrina and Retrofitting Efforts Afterward,” 2013 KGS Conference, **Keynote Speech**
6. Chung R. Song (2013), “Lessons Learned from Hurricane Katrina and Retrofitting Efforts Afterward,” Korea Institute of Construction Technology, **Invited Talk**
7. Chung R. Song (2013), “Nanomechanics based multi-sclae mechanics to mitigate high speed penetration objects,” Korea Institute of Construction Technology, **Invited Talk**
8. C.R. Song (2013), “Erosion Evaluation of Levee Soils,” GS Construction, Seoul Korea, **Invited Talk**
9. C.R. Song (2013), “Multi-scale Mechanics in Civil Engineering,” Hanyang University, Seoul Korea, **Invited Talk**
10. C.R. Song (2013), “Multi-scale Mechanics in Civil Engineering,” Korea Railway Research Institute, University, Seoul Korea, **Invited Talk**
11. Cheng A. H.-D., Song C.R. and Al-Ostaz, A. (2012), “Structural, Material, and Geotechnical Solutions to Levee and Floodwall Construction,” 2012 Dams Sector Research and Development Workshop, USACE, Vicksburg, MS, **Invited Talk**
12. C.R. Song (2011), "Design of Intelligent Levee Monitoring System," Advanced ICT for Flood and River Management, June 17, Seoul, Korea, **Invited Talk**
13. Chung R. Song (2010), "Facts and Fictions in Instrumentation for Civil Engineering," North Mississippi ASCE Meeting, Dec. 2010, **Invited Talk**
14. Chung R. Song, Alexander, H.-D. Cheng and Ahmed Al-Ostaz (2009), “Lessons Learned from Hurricane Katrina and Retrofitting Efforts Afterward,” ASCE Norht Mississippi Section. **Invited Talk**
15. Chung R. Song (2005), “Geotechnical Engineering for Difficult Ground Conditions,” ASCE North MS Conference, **Invited Talk**
16. Chung R. Song (2001), “Micro-Geotechnical Engineering,” Jungang University, Seoul, Korea, **Invited Talk**
17. Chung R. Song (1996), “Field Instrumentation,” Korea Geotechnical Society, Seoul, Korea, **Invited Talk**
18. Chung R. Song (1996), “Soft Soil Engineering,” Yonsei University, Seoul, Korea, **Invited Talk**
19. Chung R. Song (1996), “Field Instrumentation,” Yonsei University, Seoul, Korea, **Invited Talk**
20. Chung R. Song (1995), “Field Instrumentation,” Jungang University, Seoul, Korea, **Invited Talk**
21. Chung R. Song (1993), “Soft Soil Engineering,” Korea Geotechnical Society, Seoul, Korea, **Invited Talk**

**Section 2.1.7 Numbered list of Other Publications**

**Poster Sessions**

1. Binyam Bekele and Chung Song (2019), “Pore Pressure Response of Overconsolidated Soils in a Partially Drained Piezocone Penetration Test,” Student Poster Presentation, GeoOmaha2019
2. Chung R. Song, Gyunam Jin, Binyam, M. Bekele, Brian D. Sawyer and Mark Lindemann (2018), “Fast Estimation of Hydraulic Conductivity for Overconsolidated Soils Using Piezocone Results,” Student Poster Presentation, GeoOmaha2018
3. Brian Sawyer and Chung Song (2018), “Distributed Fiber Optics for Landslide Monitoring,” Student Poster Presentation, GeoOmaha2018
4. Chung R. Song and Hossein Bahmyari (2018), “Slope Stabilization and Remediation in Overconsolidated Soils in Nebraska,” Student Poster Presentation, GeoOmaha2018
5. S. Adhikari2 (2009), “Two dimensional numerical simulation of I-wall for retrofitting design of flood protection systems in New Orleans,” 2009 DHS University Network Summit Annual Student Poster Competition, Washington D.C.
6. W. Jang2 (2009), “Development of Erosion Resistant Levee Retrofitting Material,” 2009 DHS University Network Summit Annual Student Poster Competition, Washington D.C.

**Section 2.1.8 Research Funding Record (Grand Total: $12,002,042 as a PI and a Co-PI)**

1. “Erosion Resistant Rock Shoulder”, Chung Song and Richard Wood, PI, NDOT, $142,907, Jul. 1, 2021 to Jun. 30, 2013
2. “Application of Steel Sheet-Piles for the Abutment of Water-Crossing Bridges in Nebraska”, Seunghee Kim, Jongwan Eun, and Chung Song, NDOT, Co-PI, $154,314, Jul. 1, 2021 to Jun. 30, 2013
3. “Assessing Performance of Geosynthetic Reinforced Pavement with a Large-Scale Track Wheel Test and Nondestructive Testing Tools”, Jongwan Eun, Chung Song and Seunghee Kim, Co-PI, NTC, $270,000 (UNL$135,000), Oct. 1, 2020 to Feb. 28, 2022
4. “Evaluation of Light Pole Foundation Embedment”, Joshua Steelman and 6 co-PI’s, $248,261, AkDOT, Sept .1, 2020 to Feb. 28, 2022
5. “Crashworthy Foundations for Soil-Embedded Roadside Safety Hardware”, Joshua Steelman and 6 co-PI’s, MATC, Co-PI, $122,152.23, Oct. 1, 2020 to Feb. 28, 2022
6. “Spokes: Medium:Midwest: Smart Big Data Pipeline for Aging Rural Bridge Transportation Infrastructure (SMARTI)”, Chungwook Sim and 10 senior persons, $123,849, Sept. 1, 2020 to Aug. 31, 2021
7. “Crash Testing of Various Bridge Guardrails and Transitions, Phase II”, Ron Faller and 8 co-PI and senior persons, Senior person, Hawaii DOT, $2,100,000, Jan. 2, 2020 to Dec. 31, 2021
8. “Biopolymerized slope/subgrade stabilization and advanced field monitoring” - Complete, Chung R. Song (PI), Yong-Rak Kim, Richard L. Wood and Jongwan Eun, NDOT, $123,386, Jul. 1, 2019 - 12/31/2020
9. “Data-Driven Prioritization and Empirical Predictions for Bridge Scour in Nebraska” - Complete, Richard L. Wood, Christine E. Wittich, June Guo and Chung R. Song (Co-PI), NDOT, $115,662, Jul. 1, 2019 - 12/31/2020
10. “High-Mast Tower Foundation” - Complete, Chungwook Sim, Chung R. Song (Co-PI), Brandon Kreiling, and Jay Puckett, NDOT, $47,149, Jul. 1, 2019 - Dec. 3, 2020
11. “31-in. Midwest Guardrail System (MGS) and Curb Combination Guidelines for MASH TL-3”, Scott Rosenbaugh and 8 Co-PI’s, DOT-FHWA, $600,000, Jul. 3, 2019 - Jun. 2, 2022
12. “NYSDOT-MASH-1: MASH 2016 Safety Hardware Evaluations-Phase I System C1 and C3”, Karla Lechtenberg and 6 others, NY DOT, $3,228,715, Mar. 12, 2019 – Aug. 31, 2020
13. “Nebraska Specific Slope Design Manual – Extension”, Chung R. Song (PI), Yong-Rak Kim, $11,612.70, Jul. 1, 2017 - 12/31/2018
14. “Design Optimization and Monitoring of Joint-less Integral and Semi-interal Abutment Bridges in Nebraska”- Complete, Chungwook Sim(PI), Jongwan Eun(Co-PI), Seunghee Kim(Co-PI) and Chung Song(PI), NDOT, $142,312, Jul. 2017 – Dec. 2019
15. “Crash Testing of Various Bridge Guardrails and Transitions”, Ronald Faller (PI) and 12 co-PI’s, Hawaii DOT, $709,563, Oct. 22, 2020 – Apr. 24, 2020
16. “NSF BD Spokes: Medium: Midwest: Smart big data pipelines for Aging Rural Bridge Transportation Infrastructure (SMARTI)” - Complete, NSF, 09/01-2018-08/31/2020, Chungwook Sim (PI), 9 other co-PI’s and senior persons, $353,084, Sept. 13, 2018 - Aug. 31, 2020
17. “CPT Based Pile Design” – Complete, Chung R. Song (PI) and Seunghee Kim (co-PI), NDOR, $104,425, Jul. 2017 - Dec. 2018.
18. “Application of LiDAR for South Dakota DOT” – Complete, South Dakota DOT, Richard Wood (PI), Yong-Rak Kim (co-PI) and Chung R. Song (co-PI), $74,999, Sept. 2016 – Dec. 2017.
19. “Piezocone Penetration Testing Device” – Complete, NDOR, C.R. Song (PI), $89,882, Jul. 2016 – Dec. 2017.
20. “Nebraska Specific Slope Design Manual” – Complete, NDOR, C.R. Song (PI), Yong Rak Kim (co-PI), 133,731, Jul. 2016 – Dec. 2017.
21. “Development of a Traffic Noise Barrier Using Active Noise Reduction Technique” – Complete, PI, EnE Construction Co. Ltd. $153,644, Jul. 2013 – Jun. 2016.
22. “Developing a Technique for Real Time Dam Safety Evaluation and Field Feed-Back” – Complete, PI, Rural Research Institute of Korea Rural Community Corporation, $28,000, Jul. 2013 – Nov. 2013.
23. “Earthquake and Piping Hazard Assessment for DeSoto” – Complete, Tunica, Coahoma and Tate County, Mississippi – Complete, PI, MEMA/MMRI, $39,893, Apr. 2011 – Apr. 2014.
24. “Nano-Enhanced and Bio-Inspired Composite Materials for Mitigation and Protection of TIH railcars and Stationary Tanks against High Power Impact” – Complete, Co-PI, DHS/SERRI, $1,001,970.00, May, 2010 to May, 2012.
25. “Structural, Material, and Geotechnical Solutions to Levee and Floodwall Construction and Retrofitting” - Complete, PI, DHS/SERRI, $1,959,537.00, Nov. 2007 – Dec. 2010.
26. “Real time estimation of soil permeability using Piezocone Penetration Test” – Complete, PI, Korea Land and Housing Corp/Baytech Korea, $50,000, Nov. 2004 to Dec. 2007.
27. “Construction of design chart for determination of hydraulic conductivity using pore pressure response of soils” – Complete, PI, UM, $7,416, Jan. 2005 – Dec. 2005.
28. “Estimation of hydraulic conductivity using acoustic techniques” - Complete, PI, Baytech Korea, $20,605, Amount, Jul. 2004 – Jun. 2005.

**Section 2.2 Other Research Accomplishments**

**Section 2.2.1 Research Reports to Sponsor**

1. Chung R. Song, Layal Bitar, Richard Wood, Yongrak Kim, Jongwan Eun, Binyam Bekele and Basil Abualshar (2021), *Biopolymerized Slope and Subgrade Stabilization and Advanced Field Monitoring*, Final Report Submitted to Nebraska Department of Transportation, Lincoln, NE
2. Yijun Liao, Mohammad Ebrahim, Daniel Watson, Richard Wood, Chung R. Song and Yong-Rak Kim (2019), *Application of LiDAR for SDDOT*, Final report submitted to South Dakota Department of Transportation, Pierre, SD
3. Chung R. Song, Yongrak Kim, H. Bahmyari, L. Bitar and S. Amelian (2019), *Nebraska
Specific Slope Design Manual*, Final Report submitted to Nebraska Department of Transportation, Lincoln, NE.
4. Chung R. Song, S. Kim, B. Bekele, A. Silvey and Z. Zhang (2019), *CPT Based Pile Design*, Final report submitted to Nebraska Department of Transportation, Lincoln, NE.
5. Chung R. Song, Bekele B., Sawyer B. (2017), *Piezocone Penetration Testing Device*, Final reported submitted to Nebraska Department of Transportation, Lincoln, NE.
6. Chung R. Song and Sean Rogers (2016), *Active noise cancellation system to reduce tunnel blasting noise,* Final report submitted to ENE Construction Ltd. Seoul, Korea
7. Chung R. Song and Nathan Mikell (2013), *Earthquake and Piping Hazard Assessment for Desoto, Tunica, and Tate County, Mississippi*, Department of Civil Engineering, University, MS 38677, Submitted to MMRI, Nov. 14, 2013
8. Chung R. Song (2013), *Developing a Technique for Real Time Dam Safety Evaluation and Field Feed-Back*, Department of Civil Engineering, University, MS 38677, Submitted to Korea Rural Research Institute, Nov. 30, 2013.
9. Chung R. Song, Ahmed Al-Ostaz, Alexander H.-D. Cheng and Raju P. Mantena (2012), *Structural, Material, and Geotechnical Solutions to Levee and Floodwall Construction and Retrofitting*, Final Report Submitted to DHS/SERRI
10. Ahmed Al-Ostaz , Alexander Cheng, Chung R. Song, and A.M Rajendran (2012), *Nano-Enhanced and Bio-Inspired Composite Materials for Mitigation and Protection of TIH Railcars and Stationary Tanks against High Power Impact*, Final Report Submitted to DHS/SERRI
11. Chung R. Song and Won G. Jang (2008), *Real Time Estimation of Soil Permeability Using Piezocone Penetration Test*, Final Report Submitted to Korea Land and Housing Corp
12. Chung R. Song and Jin W. Kim (2006), *Estimation of Hydraulic Conductivity Using Acoustic Techniques*, Final Report Submitted to Baytech Korea
13. Al-Ostaz, A., Cheng, A.H-D., Mantena, P.R. and Song, C.R. (2006), *Nanotechnology: Modeling of Polymer-Carbon Nanotube Composite at Multiple Spatial and Time Scales*, Final Report Submitted to Mississippi Space Grant Consortium
14. Chung R. Song and Sreeka Pulijala (2004), *Construction of Design Chart for Determination of Hydraulic Conductivity Using Pore Pressure Response of Soils*, Final Report Submitted to The University of Mississippi

**Section 2.2.2 Numbered list of all National and International (Non teaching) Awards and Recognition**

1. Outstanding Service Award, Korean Geotechnical Society, 2021

Note: This is an award presented to a person who contributed the academics and service to Korean Geotechnical Society

1. Outstanding Alumni Award, Yonsei University, 2010

Note: This is an award presented to a single person in Geotechnical Engineering displine, at 50th Anniversary of Department of Civil Engineering in Yonsei University in Korea, which is one of more prestigious schools in South Korea.

**Section 2.2.3 Numbered list of all Regional and Local Awards and Recognition**

1. Outstanding Faculty Member of the Year 2010.

This is an award to one faculty per year in School of Engineering, University of Mississippi who excelled in both research and teaching.

**Section 3 Teaching Accomplishments (other than classroom instruction)**

**Section 3.1 Postdoctoral Researchers**

1. Jinoh Won (2010-2012), Co-supervised with Drs. Alex Cheng, Samsung Engineering and Construction.
2. Ge Wang (2008-2010), Co-supervised with Drs. Ahmed Al-Ostaz,
3. Weidong Wu (2010-2011), Co-supervised with Drs. Ahmed Al-Ostaz, Tennessee Tech. University

**Section 3.2 PhD Students Graduated**

1. Leti Wodajo, Department of Civil Engineering, University of Mississippi, Doctoral Committee co-chair, Unfunded, Ph.D. Hooded Summer 2019. Currently working for National Center for Physical Acoustics.
2. Sudarshan Adhikari, Department of Civil Engineering, The University of Mississippi, Doctoral Committee Chair, Funded, Dec. 2012, Currently working for Fugro Geosystems.
3. Jinwon Kim, Department of Civil Engineering, The University of Mississippi, Doctoral Committee Chair, Funded, Summer. 2010, Currently working for Samsung.
4. Wongil Jang, Department of Civil Engineering, The University of Mississippi, Doctoral Committee Chair, Funded, Summer 2010, Currently working for Korea Land and Housing Crop.

**Section 3.3** **Numbered list of PhD students currently in progress under my supervision.**

1. Binyam Bekele, Department of Civil Engineering, University of Nebraska-Lincoln, Expected to defend Fall, 2021.
2. Tewodros, Y. Yosef, Department of Civil Engineering, University of Nebraska-Lincoln, Doctoral Committee Chair, Co-supervision with Dr. Ronald Faller, Partially Funded, Ph.D. Advisor switched to Dr. Seunghee Kim as of Spring, 2020.

**Section 3.4 Numbered list of MS students supervised with graduation dates.**

1. Layal Bitar, Department of Civil Engineering, University of Nebraska Lincoln-Lincoln, *Master’s Committee Chair*, Funded, Summer, 2019
2. Alex Sylvey, Department of Civil Engineering, University of Nebraska Lincoln-Lincoln, *Master’s Committee Chair*, Funded, Spring, 201.
3. Kianoosh Koocheki, Department of Civil Engineering, University of Nebraska Lincoln-Lincoln, *Master’s Committee Chair*, Funded, Spring, 2018
4. Hossein Bahmiyari, Department of Civil Engineering, University of Nebraska -Lincoln, *Master’s Committee Chair*, Funded,. Spring, 2019, Employment: Kiewit
5. Hamil C. Department of Civil Engineering, University of Mississippi, *Master’s co-advisor*, Summer 2015.
6. Jackson, J., Department of Civil Engineering, University of Mississippi, *Master’s Committee chair*, May 2013
7. Binyam, T., Department of Civil Engineering, University of Mississippi, *Master’s co-advisor*, Aug. 2012
8. Jared, C., Department of Civil Engineering, University of Mississippi, *Master’s co-advisor chair*, Aug. 2012
9. Kidd, J. (Cooper Tire), Department of Civil Engineering, University of Mississippi, *Master’s Committee chair*, May, 2012.
10. Wodajo, L., Department of Civil Engineering, University of Mississippi, *Master’s co-advisor*, May 2011.
11. Duddu L., Department of Civil Engineering, University of Mississippi, *Master’s co-advisor*, Aug. 2007.
12. Kim, J., Department of Civil Engineering, University of Mississippi, *Master’s Committee chair*, Dec. 2006.
13. Cho H., Department of Civil Engineering, University of Mississippi, *Master’s Committee chair*, Dec. 2006.
14. Pulijala, S., Department of Civil Engineering, University of Mississippi, *Master’s Committee chair*, May 2006.
15. Biplab, B (MACTEC), Department of Civil Engineering, University of Mississippi, *Master’s co-advisor*, May 2006.

**Section 3.5. Numbered list of MS students) currently in progress under my supervision**

1. Basil Abdualshar, Department of Civil Engineering, University of Nebraska -Lincoln, MS Committee Chair, Funded, MS. Expected to defend Spring, 2022

**Section 3.6. Graduate student independent research projects under my advising**

1. Caleb Craven, Department of Civil and Environmental Engineering, University of Nebraska -Lincoln, *Master’s Committee Chair*, Self-Funded, Expected to graduate Spring, 2021
2. Joshua Hilsgen, Department of Civil Engineering, University of Nebraska -Lincoln, *Master’s Committee Chair*, Self-Funded, Completed, Spring, 2018.
3. Levi Brown, Department of Civil Engineering, University of Nebraska -Lincoln, *Master’s Committee Chair*, Self-Funded, Completed, Spring, 2018.
4. Gustavo Nunez, Department of Civil Engineering, University of Nebraska -Lincoln, *Master’s Committee Chair*, Fulbright-Funded, Completed, Spring, 2017.

**Section 3.7 Undergraduate Students**

**Section 3.7.1 Numbered list of undergraduate students supervised in independent research study.**

1. Lucas Ripa, Department of Civil Engineering, University of Nebraska Lincoln, Senior, BSCE, Fall, 2019
2. Christopher Bianchini, Department of Civil Engineering, University of Nebraska Lincoln, BSCE, 2019
3. Eden, Lu, Department of Civil Engineering, University of Nebraska Lincoln-Lincoln, Senior, BSCE, 2016
4. Brian Sawyer, Department of Civil Engineering, University of Nebraska Lincoln-Lincoln, BSCE, 2016
5. V. William, The University of Mississippi, BSCE, 2015.
6. G. Bell, The University of Mississippi, BSCE, 2013.
7. H. Prater, The University of Mississippi, BSCE, 2013.
8. S. Burdine, The University of Mississippi, BSCE, 2012.
9. M. Nathan, The University of Mississippi, BSCE, 2012.
10. J. Kidd, The University of Mississippi, BSCE, 2010.
11. R. Williams, The University of Mississippi, BSCE, 2005.
12. A. Singh, The University of Mississippi, BSCE, 2005.

**Section 3.7.2 Average number of undergraduate students advised per year**

1. University of Nebraska

10

1. University of Mississippi

40

**Section 3.7.3 Numbered list of Regional, Local and University Teaching Awards and Recognition**

1. Olson & Associate Faculty Teaching Excellence Award. (Apr. 25, 2019), University of Nebraska

Note: This is an award presented to a single faculty member per year in the department who excelled in teaching.

1. Outstanding Faculty of the Year Award, 2010, University of Mississippi

Note: This is an award presented to a single faculty member per year in School of Engineering, University of Mississippi who exceled both in research and teaching.

1. School of Engineering Teaching Award, 2009, University of Mississippi

Note: This is an award presented to a single faculty member per year in Department of Civil Engineering, University of Mississippi who exceled in teaching.

**Section 3.8 Other Teaching Accomplishments**

1. Overall student evaluation: Approximately 4.10 out of 5.0.

**Section 4 Service Accomplishments**

**Section 4.1 Professional Service**

**Section 4.1.1 Numbered list (in reverse chronological order) of Journals for which you have reviewed papers including number completed for that journal each year (e.g. 5 reviews in 2017)**.

1. Acta Geotechnica

Nov. 14, 2014

1. Applied Clay Science

July, 17, 2008

1. ASTM

Nov. 3, 2014/ Nov. 3, 2010/ Mar. 14, 2016

1. Canadian Geotechnical Journal

May 23, 2012

1. Computers and Geotechnics

July, 14, 2015

1. Fuel

Feb. 1, 2017

1. Geomechanics and Engineering

Apr. 8, 2015

1. Interaction and Multiscale Mechanics

Nov. 4, 2016, Jan. 9, 2017

1. International Journal of Damage Mechanics

Oct. 18, 2010/ Feb. 11, 2011

1. International Journal of Geotechnical Engineering

Nov. 2020

1. International Journal of Numerical and Analytical Methods in Geomechanics

Oct. 26, 2011, May, 8, 2006

1. Journal of the Acoustical Society of America

Mar. 13, 2009/ Sept. 2, 2009

1. Journal of American Society of Mechanical Engineering

June, 13, 2012/ Dec. 3, 2012

1. Journal of Engineering Mechanics Division, ASCE

Aug.8, 2008/ Nov. 16, 2009/ Aug.23, 2010/ Feb. 11, 2011/ Dec. 1, 2011/ Sept. 3, 2013/ Jul. 6, 2008, June & Nov. 2019

1. Journal of Geotechnical and Geoenvironmental Engineering, ASCE

Jan. 16, 2008/ July, 14, 2008/ Feb. 15, 2010/ Aug. 28, 2007/ Jun. 28, 2007/ Dec. 17, 2007/ Jul. 14, 2009/ Feb. 15, 2010/ Oct. 22, 2010/ Oct. 19, 2010/ Oct. 19, 2010/ Apr. 19, 2013/ Apr. 6, 2009/ Oct. 10, 2010/ Mar. 10, 2013/ Jan. 23, 2013/ Oct. 22, 2010/ Mar. 14, 2012/ Feb. 6th, 2012/ Dec. 1, 2005

1. Ocean Dynamics

Dec. 17, 2015

1. Ocean Engineering

Jan. 26, 2015

1. EMI 2007 Conference, ASCE

Many abstracts

1. EMI2015 Student Competition Paper

Jun. 3, 2015, Mar 10, 2017, 2019

1. AAM (American Academy of Mechanics) 2008 Conference

Many abstracts

1. GeoCongress 2007 Conference, ASCE
2. GeoCongress 2008 Conference, ASCE
3. GeoShanghai Conference, ASCE
4. IFCEE2015( International Foundation Congress and Equipment Expo, 2015)

Sept. 11, 2009/ Aug. 22, 2008

1. Water

 Dec. 2019, Nov. 2020

**Section 4.1.2 Numbered list (in reverse chronological order) of Leadership Positions in International and National Organizations**

1. Chair, MIMB(Modeling Inelasticity and Multiscale Behavior) committee, ASCE-EMI (2017-2019)
2. Vice Chair, MIMB(Modeling Inelasticity and Multiscale Behavior) committee, ASCE-EMI (2015 to 2017)
3. Offered the first “Tunneling” class in Ethiopia in Addis Ababa University as a service (Summer, 2012)
4. ASCE BOK3 committee
5. President of US based Korean Geotechnical Society (2017 to2019)

Note: Korean Geotechnical Society (KGS) is a professional society for Geotechnical scholars and engineers in Korea with number of members larger than five thousand. KGS has about the same long history as Geo-Institute (GI) and collaborated with similar organizations in other countries such as GI in US and NGI in Norway. As a first president of US Office of KGS, Dr. Song seeks for promoting the scholarly collaboration between US and Korea.

**Section 4.1.3 Numbered list (in reverse chronological order) memberships in Professional Organizations**

1. ASCE BOK(Body of Knowledge) TC Corresponding Member, 2017-2018
2. United States Universities Council on Geotechnical Education and Research (USUCGER), 2005-present
3. American Society of Civil Engineers, Member, 1997-present.
4. Engineering Mechanics Institute, Member, 2004-present
5. GI(Geo-Institute), 1997-present
6. American Society of Mechanical Engineering, Geomechanics Committee 2009-present
7. Chi Epsilon, Member, 2006-present.
8. Korean Geotechnical Society, 1986-present
9. Korean Tunneling Society, 2002-present

**Section 4.1.4 Numbered list (in reverse chronological order) of Research Review panels and dates of service**

1. Louisiana EPSCoR (Jan, 2011)
2. Louisiana EPSCoR (Jan. 25, 2011)
3. NSF (Apr. 3, 2009)
4. Oak Ridge National Lab REP Award (Mar. 27, 2009)
5. Mountain-Plains Consortium (MPC) (Nov. 23, 2015, May. 25, 2017)
6. Petroleum Research Fund New Directions Proposal (Mar. 22, 2017)

**Section 4.2 University Service**

1. Faculty Senate (Fall, 2020 -), UNL
2. Honorary Degree Committee (2016 to 2018 ), UNL
3. SACS Evaluation Committee (2009-2015), University of Mississippi
4. Faculty Senate (2006 – 2007), University of Mississippi
5. Buildings, Grounds and Renovations (2013-2016), University of Mississippi
6. Academic Freedom and Faculty Responsibility (2013-2015), University of Mississippi
7. Sabbatical Leave Review (2014-2015), University of Mississippi

**Section 4.3 College Service**

1. Instructional Space Committee (2019), College of Engineering
2. Award Committee (2018-2019), University of Nebraska
3. Strategic Planning Committee (2013-2015), University of Mississippi

**Section 4.4 Unit Service**

1. Planning Committee (Spring, 2020) – Chair
2. Member of Instructional Space and Support Committee (UNL, Departmental, 2019)
3. Chair ofInstructional Space and Support Committee (UNL, Departmental, 2016-2019)
4. Preparing 2-year reciprocating Geotech./Material graduate curriculum in University of Nebraska Lincoln
5. Chair of New Faculty Search Committee, Sept, 2015-May, 2016, University of Nebraska Lincoln
6. Represented the department in Engineering Advisory Board meeting, many times. University of Mississippi
7. Founded and Served the Korean Association in Oxford from 2006 to 2007 as a president to promote a better Korean – American relationships in Oxford, MS
8. Served the Korean Students Association in Ole Miss as a faculty advisor from 2005 to 2006
9. School of Engineering web committee, University of Mississippi
10. Chi Epsilon (κε) Faculty Advisor (from 2006), University of Mississippi
11. Leading Civil Engineering Juniors and Seniors to enrich their college life both academically and socially. The Olemiss chapter was awarded the “Outstanding Chapter” by the national Chi Epsilon headquarter at 2006-2007 term. University of Mississippi
12. Engineering Core Course Committee Member (Engineering Computing), University of Mississippi
13. Faculty search committee for Geological Engineering Department: served in 1 faculty search committee, University of Mississippi
14. Faculty Search Committee for Civil Engineering: served in 2 faculty search committees. University of Mississippi
15. Represented the School of Engineering in two Science Fairs, University of Mississippi
16. Attended ExCEED (Excellence in Civil Engineering Education) workshop and conveyed the information in Civil Engineering seminar class, University of Mississippi
17. Served as a faculty advisor for ASCE concrete canoe completion at University of Louisiana, Lafayette, LA (Apr. 7, 2005 to Apr. 9, 2005), University of Mississippi
18. Invited external speakers for graduate seminar (Ms. Griffith Brownlee, Ms. Jody Dendurent from Mirafi Co. Mr. Noah Vromanm from ERDC, Dr. Azzad Hossain from NCCHE, Mr. Brad Ormon from Burs Cooley and Dennis Co. Mr. Michael Marasa from Hayward Baker Co., Mr.Michael Wright from MDOT, Mr. Bill Rigby from BE&K Inc.), University of Mississippi

**Section 4.4.1 Numbered list of membership positions on unit committees.** Include committee name, dates, and title.

1. Graduate Committee (2017-2019), CIVE Department, member

**Section 4.5 Other Service Accomplishments**

**Conference Sessions Chaired**

1. *Multiphysics and Multiscale Modeling of Engineering Materials*, 2 sessions in EMI2021 (with Drs. Yong-Rak Kim and Huiming Yin), Remote Conference.
2. *Multiphysics and Multiscale Modeling of Engineering Materials*, 2 sessions in EMI2020 (with Drs. Yong-Rak Kim and Huiming Yin), Cancelled due to COVID-19.
3. *Multiphysics and Multiscale Modeling of Engineering Materials*, 2 sessions in EMI2019 (with Drs. Yong-Rak Kim and Huiming Yin), Caltech, CA
4. *Multiphysics and Multiscale Modeling of Engineering Materials*, 2 sessions in EMI2018 (with Drs. Yong-Rak Kim and Huiming Yin), MIT, MA
5. *Multiphysics and Multiscale Modeling of Engineering Materials*, 2 sessions in EMI2017 (with Drs. Yong-Rak Kim and Huiming Yin), UC San Diego, CA
6. *Geotechnical Engineering – The Nexus*, UKC2016, Aug. 10-13, Dallas TX
7. *Multiphysics and Multiscale Modeling of Engineering Materials*, 2 sessions in EMIPMC 2016 (with Drs. Yong-Rak Kim and Ahmed Al-Ostaz), Vanderbilt, TN. 2016
8. *Civil Engineering* I, II and III Sessions in 2013 MAESC Conference, Oxford, MS
9. *Disaster/Safety Issues Session* in MAESC2009, Memphis, Tennessee, May, 2009
10. *Behavior of Geomaterials in Nano to Micro Scale Session* in 2008 First AAM Conference, American Academy of Mechanics, New Orleans, LA, Jun. 2008
11. *Multi-Scale Modeling and Simulation of Nano Structured Materials*, 3 sessions in 2008 First AAM Conference, American Academy of Mechanics, New Orleans, LA, Jun. 2008
12. *Micromechanics of Granular Media Session in* 2008 ASCE Annual Conference (GeoCongress), New Orleans, LA, Mar. 2008
13. ***Nanomechanics in Geotechnical Engineering Session*** *in* 2007 ASCE Annual Conference (GeoDenver), Denver, Colorado, Feb, 2007

**Section 5 Other Accomplishments**

**Section 5.1 Professional Development (add additional sections below as desired)**

1. APEC (International PE in Asian Pacific Economy Community which includes US and Canada) Engineer, 2002