

## **EXPERTISE**

Dr. John Nelson is a Principal and owner of Engineering Analytics, Inc. In that capacity he provides technical review and expert witness testimony on a variety of projects. Dr. Nelson has over 50 years of experience in the area of foundation engineering and construction. He was on the faculty of Colorado State University for 39 years. During that time he was also an original shareholder in Shepherd Miller, Inc. and served as a corporate consultant at Tetra Tech, Inc. for 7 years.

Dr. Nelson is the senior author of the book, "Expansive Soils: Problems and Practices in Foundation and Pavement Engineering." He has experience in the areas of consulting engineering, research, teaching, and construction. He has a broad range of experience dealing with expansive soils, landslides and slope stability, compacted fills, soft soils, seepage and water movement in soils, design of embankment dams, and mill tailings management. Since 1974 he has been actively engaged in research and practice dealing with foundations on expansive soils, and also tailings management.

In the area of expansive soils, he was the principal investigator on several major research projects to investigate water movement in expansive soils and developed methods of heave prediction beneath slabs. He is also conducting research on full-scale piers in expansive soils. Dr. Nelson has developed a method for the design of stiffened slabs-on-grade and has provided professional litigation support dealing with slabs and foundations on expansive and collapsing soils.

Dr. Nelson has extensive experience in the area of slope stability and creep movement of slopes. He has published several technical papers on this subject as stated in his resume. He has taught several undergraduate and graduate level courses at Colorado State University in which this subject has been part of the curriculum. He has served as a consultant and expert witness on several projects dealing with slope stability both as landslides and as a part of the design and analyses of dams.

In the area of dams and mill tailings management, he served as chief technical reviewer for the USNRC for the Church Rock tailings dam failure and reviewed almost all of the Title II tailings management license applications. He is the engineer of record for the design of raises of tailings dams in Arkansas and New Mexico. He served as an expert witness on litigation involving failure of a tailings dam in Idaho, and on litigation involving seepage from large tailings impoundments in Arizona. He has also served as senior reviewer on several projects dealing with reclamation of tailings impoundments, and seepage from tailings. He taught a graduate course on Design of Dams at Colorado State University for over 30 years.

He is the author of more than 100 technical papers and reports.

## **REGISTRATIONS AND CERTIFICATIONS**

Professional Engineer – Arkansas, Colorado, Illinois, Minnesota, New Mexico, Wyoming

Diplomate, Geotechnical Engineering, Academy of Geo-Professionals, ASCE

## **EDUCATION**

Ph.D., Civil Engineering, Illinois Institute of Technology, Chicago, Illinois, 1967.

M.S., Civil Engineering, Illinois Institute of Technology, Chicago, Illinois, 1962.

B.S., Civil Engineering, Illinois Institute of Technology, Chicago, Illinois, 1960.

## **PROJECT EXPERIENCE**

*The following present examples of selected projects on which Dr. Nelson has contributed.*

### **EXPANSIVE SOILS**

- Author of Book, EXPANSIVE SOILS: Problems and Practices in Foundation and Pavement Engineering.
- Woodward Governor Building, Loveland, Colorado – Heave of foundation piers in amounts up to 12 inches. Consultant to determine causes and remediation plan.
- Johannesburg, South Africa – Designed stiffened mat foundations on expansive soil for a 3-story masonry dormitory at a gold mine near Welkom, South Africa
- Federal Aviation Administration, TRACON Building, Denver International Airport, Denver, Colorado – Heave of foundation piers in amounts up to 6 inches and slab-on-grade floor in amounts up to 8 inches. Consultant to determine causes and remediation plans. He also served as an expert witness in litigation.
- Peterson et al. v. Mission Viejo, Highlands Ranch, Colorado – Class action lawsuit involving 981 houses experiencing distress due to expansive soil. Expert witness in litigation.
- Denver International Airport, Denver, Colorado – Pavement heave in amounts over 2 feet due to formation of Ettringite after addition of lime for subgrade stabilization. Consultant to determine causes of heave.
- Volunteers of America Building, Montrose, Colorado – Foundation heave due to Ettringite formation and other factors. Consultant to determine causes of movement.

- Winner Regional Health Care Center, Winner, South Dakota – Building distress due to heave of floor and foundation elements. Consultant to determine extent and cause of distress.
- Litigation Support – Expert witness on over 100 cases involving foundation and slab movement in residential and commercial buildings due to heave of expansive soils.

### **COLLAPSIBLE SOIL**

- Rangely High School, Rangely, Colorado – Settlement of Pier Foundation due to collapse of collapsible soils. Consultant to determine cause and review repair plan. Also, monitored repair by compaction grouting.
- Terraces Condominiums, Glenwood Springs, Colorado – Settlement of Shallow Foundations due to collapsible soils. Expert Witness to testify regarding extent and cause of distress, and recommend remedial action. Compaction grouting was accomplished.
- New Castle, Colorado – Settlement of several houses constructed on collapsible soils, due to wetting from an irrigation ditch. Expert Witness to testify regarding causes, and model ground water infiltration.
- Tanoan Heights Subdivision, Albuquerque, New Mexico – Settlement of several houses in subdivision adjacent to golf course. Wetting of collapsible soils caused settlement. Expert witness to testify regarding cause and extent of distress.

### **SLOPE AND RETAINING WALL INSTABILITY**

- Colorado Springs, Colorado – Expert Witness, Large rock slope failure in limestone quarry.
- Residences at Little Nell, Aspen, Colorado – Expert Witness, Slope movement as a result of high retaining structure. The case involves continuing movement and damage to house above the wall.
- Sixth Avenue Estates, Denver, Colorado – Expert Witness, Large Slope failure involving approximately 10 high value houses constructed on landslide.
- Cedar Heights, Colorado Springs, Colorado – Expert Witness, Failure of several large embankments supporting roads across small canyons.
- Redlands Parkway, Grand Junction, Colorado – Expert Witness, Landslide of bluff overlooking the Colorado River. Landslide damaged house constructed at top of bluff.
- Vancouver, British Columbia, Canada – Expert Witness, failure of Stress-Wall patented retaining wall along roadside.

- York Canyon Tailings Dam #2, Raton, New Mexico – Consultant on slope failure near abutment.
- Nchanga Copper Mine, Zambia, Africa – Review consultant on 1,000 ft high open pit high-wall that was undergoing creep movement.
- Joe Wright Reservoir, Fort Collins, Colorado – Consultant on monitoring slope movement at dam abutment.

### **TAILINGS AND WATER RESOURCE DAMS**

*Conducted Seepage and Stability Analyses and Design of Dams. Selected cases include:*

- Tailings Dam #3, Pittsburg & Midway, York Canyon Mine, New Mexico – Review Consultant for initial construction.
- Tailings Dam #3, Pittsburg & Midway, York Canyon Mine, New Mexico – Engineer of Record for design of raise of dam.
- Hot Springs Tailings Dam, Umetco Corp., Hot Springs, Arkansas – Design of record for raise and reclamation of tailings dam.
- Doe Run Resources, Idaho – Expert Witness, Overtopping failure of abandoned gold tailings dam.
- Church Rock Tailings Dam, Church Rock, New Mexico – Chief Technical Reviewer for the USNRC, regarding failure of the Church Rock Tailings Dam.
- Church Rock Tailings Dam, Expert Witness for Sphere Insurance Co. regarding claims due to failure.
- UM/MNO, Olen, Belgium - Design of Reclamation for Uranium Tailings.
- Pinal Creek, Globe/Miami, Arizona – Expert Witness regarding seepage from a number of large tailings impoundments.
- Standley Lake Dam, Denver, Colorado – Member of Review Panel regarding upgrading of dam.
- Royal Commission of Inquiry, Vancouver, British Columbia, Canada – Consulting Expert, prepared report on seepage from tailings dam and testified at Commission Hearings.
- Chief Technical Reviewer, Uranium Mill License Applications, USNRC – Technical support contract to review tailings dam issues as part of license applications.

### **OTHER CASES**

- Pipe Line Failure, Idaho – Expert Witness regarding irrigation pipe line failure due to overloading by trucks passing over pipeline route.
- Blasting Damage, Colorado Springs, Colorado – Expert Witness regarding damage of foundation due to nearby blasting.
- Blasting Damage, Cripple Creek, Colorado – Expert Witness regarding damage of foundation due to nearby blasting.
- Drop Forge Hammer Foundation, Colorado Springs, Colorado – Design of foundation for Drop Forge at factory.
- Post Tensioned Bridge Foundation, Vereeniging, South Africa – Design of foundations for bridge piers.

## **PROFESSIONAL EMPLOYMENT HISTORY**

### **ACADEMIC EXPERIENCE**

- Professor Emeritus, Colorado State University, Fort Collins, Colorado (2007-present)
- Faculty Member, Civil Engineering Department Colorado State University, Fort Collins, Colorado (1973-2007). Currently Professor Emeritus; during the period when I was on the faculty, I served in the following capacities.
  - o Director for Southeast Asia; National Technological University; Developed NTU – Thailand (1993-1995)
  - o Head, Civil Engineering Department, Colorado State University (1986-1991)
  - o Visiting Specialist, Steffen, Robertson & Kirsten, Inc., Johannesburg, South Africa. Review consultant for projects dealing with expansive and collapsing soils, embankments on soft clay, slope stability in mine pits, and seepage and stability of mine tailings. (1985-1986)
  - o Program Leader of Geotechnical Engineering Program, Colorado State University. Developed the Geotechnical Engineering Program, and graduate level course work for the program (1973-1985)
- Associate Professor, Asian Institute of Technology, Bangkok, Thailand (1968-1973) (Assistant Professor 1968-1970). Developed soil dynamics and field operations programs. Director of Drill Rig and Field Instrumentation. Research

areas included field instrumentation in clay, shear strength and dilatation of clay, and vibrations of foundations.

- Research Engineer, IIT Research Institute, Chicago, Illinois (1962-1968). Major research areas included Lunar Soil Mechanics, response of LEM footpads for Apollo Mission, penetrometer data from the Surveyor Mission. Also conducted preliminary work on stress wave testing of caissons.

### **CONSULTING ENGINEERING EXPERIENCE**

- CEO and Principal Geotechnical Engineer, Engineering Analytics, Inc., Fort Collins, Colorado (2008-present)
- Principal Geotechnical Engineer, Tetra Tech, Inc., Fort Collins, Colorado (2001-2008)
- Shareholder and Corporate Consultant, Shepherd Miller, Inc., Fort Collins, Colorado (1990-2001)
- Shareholder and Corporate Consultant, Water Waste and Land, Inc., Fort Collins, Colorado (1978-1990)

### **HONORS and AWARDS**

- **Award for Excellence**, 2010, U.S. Army, Presented by Major General Steven R. Abt, Deputy Commanding General, United States Army Accessions Command
- **Gold Medal**, 1987, Presented by HRH Princess Maha Chakri Sirindhorn for Contributions to Geotechnical Engineering from the Southeast Asian Geotechnical Society
- **Honorary Award**, 2007, presented by Colorado State University in recognition of serving as Chairman of the Tailings and Mine Waste Conference since 1978.
- **Hometown Hero**, 2001, Fort Collins Coloradoan (for Organizing Tailings and Mine Waste Conferences)
- **Abell Faculty Teaching Award**, 1992, College of Engineering, Colorado State University
- **Engineer of the Year Award**, 1990, Professional Engineers of Colorado
- **Meritorious Service Award**, 1989, Professional Engineers of Colorado
- **Certificate of Honor**, 1987, Colorado Engineering Council, Engineering Education and Geotechnical Engineering

- **Chapter Honor Member**, 1984, Chi Epsilon
- **Outstanding Service Award**, 1983, Professional Engineers of Colorado
- **Outstanding Professor Award**, 1976, Chi Epsilon, Colorado State University
- **Honorary Member**, 1973, Southeast Asian Society of Soil Engineering
- **Associate Membership Award**, 1960, Illinois Section, American Society of Civil Engineers

## ***PROFESSIONAL AFFILIATIONS***

American Society of Civil Engineers (ASCE) – Fellow

Southeast Asian Society of Geotechnical Engineering – Honorary Member

International Society for Soil Mechanics and Geotechnical Engineering

Society of Mining, Metallurgy, and Exploration (SME)

Sigma Xi

Tau Beta Pi

Chi Epsilon

Order of the Engineer

## ***PROFESSIONAL ACTIVITIES***

Reviewer, Journal of Geotechnical and Geoenvironmental Engineering, American Society of Civil Engineers (1975-present)

Chairman, Annual Symposia on Mill Tailings Management, Colorado State University (Tailings & Mine Waste) (1978-2007)

Organizer and Lecturer of short course on Design of Foundations on Expansive Soil, Colorado State University (1994-2006)

Chairman, First International Conference on Environmental Geotechnics, Edmonton, Alberta, Canada (1995)

Chairman, Committee on Environmental Geotechnics, ISSMGE (1993-1995)

Governor's Council on Colorado Natural Hazards Mitigation (1991-1994)

Chairman, Technical Committee, TC5, Environmental Control, International Society for Soil Mechanics and Foundation Engineering (1990-1994)

Engineering Accreditation Commission, ABET, Member (1990-1993)

Chairman, ASCE Department Heads Council (1990-1991) (Vice-Chairman 1989-1990)

Chairman, ASCE Geotechnical Specialty Conference Hydraulic Fill Structures, Fort Collins, August 1988 (1986-1988)

Member, PE/PAC, Political Action Committee, Professional Engineers of Colorado (1981-1991) (Chairman 1982, 1985)

Chairman, JE/PAC, Joint Engineers, Political Action Committee (1983-1985)

Chairman, ASCE Committee on Embankment Dams and Slopes (1980-1983) (Member from 1974-1980)

Member, Expansive Soils Research Council, ASCE (1978-1983)

Organizer and Lecturer of annual short courses on Design and Construction of Tailings Impoundments, Colorado State University (1978-1981)

Chairman, Geotechnical Engineering Division, Colorado Section, ASCE (1976-1988)

Vice-Chairman, Geotechnical Engineering Division, Colorado Section, ASCE (1975-1976)

Executive Committee, International Society for Soil Mechanics and Foundation Engineering (1971-1973)

Secretary, Southeast Asian Society of Soil Engineering (1968-1973)

Secretary, Fourth Asian Regional Conference of the ISSMFE, Bangkok (1971)

Organizing Committee, Second Southeast Asian Conference on Soil Engineering, Singapore (1970)

Reviewer, Applied Mechanics Review (1967-1977)

Committee on Continuing Education, Illinois Section, ASCE (1963-1967). Chairman in 1966 when Design and Construction Structures to Resist Earth Pressures was published.

## **PUBLICATIONS**

### **BOOKS**

NELSON, J.D. and MILLER, D.J. (1992), Expansive Soils: Problems and Practice in Foundation and Pavement Design, John Wiley and Sons, New York, NY.

NELSON, J. D. (1988), CHAPTER 9 – SOIL SUCTION, in Foundations on Expansive Soils, by Fu Hua Chen, Elsevier Science Publishers.



**REFEREED PAPERS**

- NELSON, J.D. and VEY, E. (1964), Bearing Capacity of the Lunar Soil, ASME Paper No. 64 - WA/AV-13, December, pp. 1-8.
- VEY, E. and NELSON, J. D. (1965), Engineering Properties of Simulated Lunar Soils, Journal of Soil Mech. & Found. Div., ASCE, Vol. 91, SM1, January, pp. 25-52.
- NELSON, J. D. and VEY, E. (1968), Relative Cleanliness as a Measure of Lunar Soil Strength, Journal of Geophysical Research, Vol. 73, No. 12, June, pp. 3747- 3764.
- MOH, Z. C., NELSON, J. D. and BRAND, E. W. (1969), "Strength and Deformation Behavior of Bangkok Clay," Proc. VII International Conference on Soil Mechanics and Foundation Engineering, Mexico City, August.
- NELSON, J. D. and SIU, K. L. (1971), "The Influence of Structure on The Dilation of Clay," Proc. First Australia-New Zealand Conference on Geomechanics, Melbourne, Australia, August.
- NELSON, J. D. (1971), Discussion on Paper "Apollo 11 Soil Mechanics Results" by N. C. Costes, W. D. Carrier, J. K. Mitchell, and R. F. Scott, Journal of Soil Mech. & Found. Div. ASCE, Vol. 97, No. SM10, October, pp. 1497 1499.
- NELSON, J. D. and VIRANUVUT, S. (1973), Traffic Induced Vibrations at Wat Po, Bangkok, Geotechnical Engineering, Vol. 4, No. 1, June, pp. 15-30.
- NELSON, J. D. and THOMPSON, E. G. (1977), A Theory of Creep Failure in Overconsolidated Clay, J. Geotechnical Engineering Division, ASCE, Vol. 103, No. GT11, November, pp. 1281-1293.
- McWHORTER, D. B. and NELSON, J. D. (1979), "Unsaturated Flow Beneath Tailings Impoundments," J. Geotechnical Engineering Division, ASCE, Vol. 105, No. GT11, November, pp. 1317-1334.
- McWHORTER, D. B. and NELSON, J. D., "Seepage in the Partially Saturated Zone Beneath Tailings Impoundments," Mining Engineering, J. AIME, April 1980, pp. 432-439.
- MANSOURI, T. A., NELSON, J. D., and THOMPSON, E. G. (1983), "Dynamic Response and Liquefaction of Earth Dams," J. Geotechnical Engineering Division, ASCE, Vol. 109 No. 1, January, pp. 89-100.
- MOH, Z. C. and BRAND, E. W. and NELSON, J. D. (1972), "Pore Pressure Under a Bund on Soft Fissured Clay, "Proc. Specialty Conference on Performance of Earth and Earth-Supported Structures, ASCE, Lafayette, Indiana, June.
- NELSON, J. D. (1973), "Influence of Clay Fabric on Bonds and Dilatation," Proc. Int'l Symposium on Soil Structure, Gothenburg, Sweden, August.

NELSON, J. D., MOH, Z. C. and BRAND, E. W. (1973), "Laboratory and Field Consolidation of Soft Clay," Proc. VIII International Conference on Soil Mechanics and Foundation Engineering, Moscow, U.S.S.R., August.

PENG, S. M. and NELSON, J. D. (1973), "Ground Motion of Surface Waves," Specialty Session No. 8 - Soil Dynamics and Seismic Effects on Foundations, Proc. VIII International Conference on Soil Mechanics and Foundation Engineering, Moscow, U.S.S.R., August.

NELSON, J. D., SHEPHERD, T. A. and CHARLIE, W. A. (1977), "Parameters Affecting Stability of Tailings Dams," Proc. Geotechnical Practice for Disposal of Solid Waste Materials, ASCE Specialty Conference, Ann Arbor, Michigan, June.

PORTER, A. and NELSON, J. D. (1980), "Strain Controlled Testing of Soils," Proc. of 4th Int'l Conference on Expansive Soils, ASCE and Int'l. Soc. Soil Mech. & Found. Engrg., June, 15 pp.

WARDWELL, R. E. and NELSON, J. D. (1981), "Settlement of Sludge Landfills with Fiber Decomposition," Proc. X International Conference on Soil Mechanics and Foundation Engineering, Stockholm, Sweden, June.

MCWHORTER, D. B., NELSON, J. D., SHEPHERD, T. A. and WARDWELL, R. E. (1982), "Role of Partially Saturated Soil in Liner Design for Hazardous Waste Disposal Sites," Role of Unsaturated Zone in Radioactive and Hazardous Waste Disposal, American Geophysical Union Publication, 23 pp.

DRUMRIGHT, E. E. and NELSON, J. D., (1984), "Three-Dimensional Stress Relaxation Behavior of Marine Sediments," Strength Testing of Marine Sediments: Laboratory and In-Situ Measurements, ASTM STP 883, R. C. Chaney and K. R. Demars, Eds., American Society for Testing and Materials, Philadelphia, 1985, pp. 294-305.

SMITH, G., ABT, S. and NELSON, J., (1985) "Profile Prediction of Hydraulically Deposited Tailings," SME Journal, Div. of AIME, July.

VAN ZYL, D., NELSON, J. D., and WARDWELL, R. E. (1987), "Use of Dilatometer and Piezocone Testing in Design of Tailings Reclamation Plans" Transactions of the SME of AIME.

EDGAR, THOMAS V., NELSON, J. D., and MCWHORTER, D. B. (1989), "Nonisothermal Consolidation of Unsaturated Soils," Journal of Geotechnical Engineering, ASCE, Vol. 115, No. 10, pp. 1351 - 1372, October, 1989.

ABT, S. R., NELSON, J. D., JOHNSON, T. L. and HAWKINS, E. F., (1989), "Cap Stabilization for Reclaimed Uranium Sites," Energy Engineering, ASCE, December 1989.

MARCUSON, W. F., DOBRY, R., NELSON, J. D., WOODS, RICHARD, D., and YOUNG, T. L. (1991), "Issues in Geotechnical Engineering Education," Journal of Professional Issues in Engineering and Practice, ASCE, Vol. 117, No. 1, pp. 1-9, January, 1991

EDGAR, T.V., and NELSON, J.D., (1992), "Flow Equations in Three Dimensional Finite Strain," Proc 7th Intl. Conf. on Expansive Soils, ASCE & ISSMFE, Dallas, Texas, August, pp 109-113.

MILLER, D.J., and NELSON, J.D., (1992), "Osmotic Suction as a Valid Stress State Variable in Unsaturated Soils," Proc 7th Intl. Conf. on Expansive Soils, ASCE & ISSMFE, Dallas, Texas, August, pp 179-184.

MILLER, D.J., and NELSON, J.D., (1993), "The Role of Osmotic Suction in Stress State," ASCE Annual Meeting, Session on Unsaturated Soil, Dallas Texas, October. ASCE Geotechnical Special Publication No. 39.

PERKO, H.A. and NELSON, J.D., (2000), "Vacuum and Reduced Gravity Effect on Bearing Capacity", Proceedings, SPACE 2000, ASCE, Albuquerque, NM, March, 2000.

PERKO, H.A., THOMPSON, R.W., and NELSON, J.D., (2000), "Suction Compression Index Based on CLOD Test Results", Advances in Unsaturated Geotechnics, ed. Shackelford et al., ASCE Press Reston VA, pp393-408.

PERKO, H.A., NELSON, J.D., and SADEH, W.Z., (2001), "Surface Cleanliness Effect on Lunar Soil Shear Strength", J. Geotechnical and Geoenvironmental Engrg, ASCE, p.1.

NELSON, JOHN D., DANIEL D. OVERTON, and DEAN B. DURKEE, (2001), "Depth of Wetting and the Active Zone", Expansive Clay Soils and Vegetative Influence on Shallow Foundations, proceedings of the conference, ASCE, Oct. 10-13, pp 95-109.

AL-RAWAS, A. A., TAHA, R., NELSON, J. D., AL-SHAB, T.B., and AL-SIYABI, H., (2002), "A Comparative Evaluation of Various Additives Used in the Stabilization of Expansive Soils", Geotechnical Testing Jnl, GTJODJ, Vol. 25, No. 2, June, pp. 199-209.

OVERTON, D.D., CHAO, K.C., and NELSON, J.D., (2006), "Time Rate of Heave Prediction in Expansive Soils," GeoCongress 2006 Conference, Atlanta. February.

CHAO, K.C., OVERTON, D.D., and NELSON, J.D., (2006), "The Effects of Site Conditions on the Predicted Time Rate of Heave." Proceedings of the Fourth International Conference on Unsaturated Soils. Carefree, Arizona. April.

NELSON, J.D., CHAO, K.C., and OVERTON, D.D., (2006), "Design Parameters for Slab-on-Grade Foundations." Proceedings of the Fourth International Conference on Unsaturated Soils. Carefree, Arizona. April.

NELSON, J.D., REICHLER, D.K., and CUMBERS, J.M., (2006), "Parameters for Heave Prediction by Oedometer Tests." Proceedings of the Fourth International Conference on Unsaturated Soils. Carefree, Arizona. April.

MILLER, D.J. and NELSON, J.D., (2006), "Osmotic Suction in Unsaturated Soil Mechanics." Proceedings of the Fourth International Conference on Unsaturated Soils. Carefree, Arizona. April.

PERKO, H.A., NELSON, J.D., and GREEN, J.R., (2006), "Mars Soil Mechanical Properties and Suitability of Mars Soil Simulants." Journal of Aerospace Engineering, ASCE, Vol. 19, No. 3. July. pp. 169-176.

CHAO, K.C., OVERTON, D.D., and NELSON, J.D., (2006), "Design and Installation of Deep Benchmarks in Expansive Soil." Journal of Surveying Engineering, ASCE, Vol. 132, No. 3. August. pp. 124-131.

NELSON, J.D., OVERTON, D.D., and, CHAO, K.C., (2006), "Evolution of Foundation Design for Expansive Soils." Proceedings of the 2006 Biennial Geotechnical Seminar, Geo-Volution 2006 Conference, Denver, Colorado. November.

NELSON, J.D., CHAO, K.C., and OVERTON, D.D. (2007), "Development of Compressive Pier Force in Expansive Soils." Proceedings of the Geo-Denver 2007 Conference, Denver, Colorado. February.

OVERTON, D.D., CHAO, K.C., and NELSON, J.D. (2007), "Heave Distress of a Manufacturing Building." Proceedings of the Geo-Denver 2007 Conference, Denver, Colorado. February.

NELSON, J.D., CHAO, K.C., and OVERTON, D.D. (2007), "Definition of Expansion Potential for Expansive Soil." Proceedings of the 3rd Asian Conference on Unsaturated Soils, Nanjing, China. April.

CHAO, K.C., OVERTON, D.D., and NELSON, J.D. (2007), "Case History of a Reactivation of a Landslide Due to Irrigation on Unsaturated Soil." Proceedings of the 3rd Asian Conference on Unsaturated Soils, Nanjing, China. April.

DORNFEST, E.M., NELSON, J.D., and OVERTON, D.D. (2007), "Case History and Causes of a Progressive Block Failure in Gently Dipping Bedrock", Proceedings of the First North American Landslide Conference, June 3-8, Vail, Colorado.

NELSON, J.D., CHAO, K.C., and OVERTON, D.D. (2008), "Modeling Vadose Zone Water Migration Based on Downhole Nuclear Gauge Data." Proceedings of the 3rd International Conference on Site Characterization ISC'3, Taipei, Taiwan. April 1-4.

CUMBERS, J.M., NELSON, J.D., CHAO, K.C., and OVERTON, D.D. (2008). "An Evaluation of Soil Suction Measurements Using the Filter Paper Method and Their Use in Volume Change Prediction." Proceedings of the 1st European Conference on Unsaturated Soils, Durham, UK. July.

CHAO, K.C., NELSON, J.D., OVERTON, D.D., and CUMBERS, J.M. (2008). "Soil Water Retention Curves for Remolded Expansive Soils." Proceedings of the 1st European Conference on Unsaturated Soils, Durham, UK. July.

OVERTON, D.D., NELSON, J.D., and CHAO, K.C. (2009). "Analyses of Frost-Migration Under Post-Tensioned Slabs." The 14th Conference on Cold Region Engineering, Duluth, MN, USA. August.

NELSON, J.D. and CHAO, K.C. (2010). "Depth of Investigation for Foundation Soils." The 17th Southeast Asian Geotechnical Conference, Taipei, Taiwan. May.

NELSON, J.D., OVERTON, D.D., and CHAO, K.C. (2010). "An Empirical Method for Predicting Foundation Heave Rate in Expansive Soil." The GeoShanghai 2010 International Conference, Shanghai, China. June.

CHAO, K.C., OVERTON, D.D., and NELSON, J.D. (2010). "Effect of Water Sources on Water Migration in the Vadose Zone." The GeoShanghai 2010 International Conference, Shanghai, China. June.

CHAO, K.C., NELSON, J.D., OVERTON, D.D., and NELSON, E.J. (2010). "Commentaries on the Consolidation-Swell Test." Proceedings of the 5th International Conference on Unsaturated Soils, Barcelona, Spain. September.

OVERTON, D.D., CHAO, K.C., and NELSON, J.D. (2010). "Water Content Profiles for Design of Foundations on Expansive Soils." Proceedings of the 5th International Conference on Unsaturated Soils, Barcelona, Spain. September.

NELSON, J.D., HATTON, C.N., and CHAO, K.C. (2010). "A Constitutive Relationship for Collapsible Soils in terms of Stress State Variables." Proceedings of the 5th International Conference on Unsaturated Soils, Barcelona, Spain. September.

NELSON, J.D., CHAO, K.C., OVERTON, D.D., and DUNHAM-FRIEL, J.S. (2011). "Evaluation of Level of Risk for Structural Movement Using Expansion Potential." The Geo-Frontiers Conference, Dallas, Texas, USA. March.

CHAO, K.C., NELSON, J.D., and OVERTON, D.D. (2011). "Factors Influencing Design of Deep Foundations on Expansive Soils." The Fifth Asia-Pacific Conference on Unsaturated Soils, Pattaya, Thailand. November.

NELSON, E.J., NELSON, J.D., CHAO, K.C., and KANG, J.B. (2011). "Influence of Surface Grading on Infiltration." The Fifth Asia-Pacific Conference on Unsaturated Soils, Pattaya, Thailand. November.

NELSON, J.D., THOMPSON, E.G., SCHAUT, R.W., CHAO, K.C., OVERTON, D.D., and DUNHAM-FRIEL, J.S. (2012). "Design Procedure and Considerations for Piers in Expansive Soils." Journal of Geotechnical and Geoenvironmental Engineering, ASCE.

NELSON, J.D., CHAO, K.C., OVERTON, D.D., and SCHAUT, R.W. (2012). "Calculation of Heave of Deep Pier Foundations." The Geotechnical Engineering Journal of the Southeast Asian Geotechnical Society and Association of Geotechnical Societies in Southeast Asia. March.

**KEYNOTE SPEAKER**

NELSON, J. D. (1983), "Potash Tailings Management," Keynote Speaker, Potash 83 (International Conference on Potash Mining) Saskatoon, Saskatchewan.

NELSON, JOHN D. (1985), "Foundation Engineering on Expansive Soils," Invited Keynote Speaker, 33rd Annual Conference on Soil Mechanics and Foundation Engineering, University of Minnesota, Minneapolis, MN.

NELSON, JOHN D. (1985), "Constitutive Relationships and Testing of Unsaturated Soils," Invited keynote paper presented at XI International Conference on Soil Mechanics and Foundation Engineering, San Francisco.

NELSON, JOHN D., and DAVIS, L. A. (1987), "Drainage and Water Movement in Tailings Impoundments," State-of-the-Art Address, Proc. International Conference on Mining and Industrial Waste Management, South Africa Institution of Civil Engineers, Pretoria, S.A.

NELSON, JOHN D., and McPHAIL, GORDON I. (1989), "Design and Construction of Gold Mill Tailings Impoundments," State-of-the-Art Paper, Proc. Int'l. Conf. on Gold Mining, SME of AIME, Vancouver, B. C.

NELSON, JOHN D., SEALY, C.O., and OVERTON, D.D. (1997), "Characterization of Waste Disposal Site, Owens Lake, California, 2nd International Conference on Mining and Industrial Waste, Johannesburg, South Africa, June, 1997.

NELSON, J.D., OVERTON, D.D., and CHAO, K.C., (2003), "Design of Foundations for Light Structures on Expansive Soils," California Geotechnical Engineers Association, 2002 – 2003 Annual Conference, Carmel, California, April.

NELSON, J.D., CHAO, K.C., and OVERTON, D.D. (2007), "Design of Pier Foundations on Expansive Soils." Proceedings of the 3rd Asian Conference on Unsaturated Soils, Nanjing, China. April.

NELSON, J.D. (2010). "Heave Prediction in Expansive Soils." Panel Member. 5th International Conference on Unsaturated Soils, Barcelona, Spain. September.

NELSON, J.D., CHAO, K.C., OVERTON, D.D., and SCHAUT, R.W. (2011). "Calculation of Heave of Deep Pier Foundations." The Fifth Asia-Pacific Conference on Unsaturated Soils, Pattaya, Thailand. November.

**SYMPOSIA AND OTHER PAPERS**

NELSON, J. D. (1969), "Sampling of Lunar Soil," Symposium in Print-Specialty Session No. 1, Soil Sampling, VII International Conference on Soil Mechanics and Foundation Engineering, Mexico City, August.

NELSON, J. D. and HENGCHAOVANICH, D. (1970), "Effects of Overconsolidation on the Shear Strength Characteristics of a Marine Clay," Proc. Second Southeast Asian Conference on Soil Engineering, Singapore, June.

SATYAVANIJA, P. and NELSON, J. D. (1971), "Shear Strength of Clays Subjected to Vibratory Loading," Proc. Fourth Asian Regional Conference on Soil Mechanics and Foundation Engineering, Bangkok, 1971.

NELSON, J. D., BRAND, E. W., MOH, Z. C. and MASON, I. D. (1971), "The Use of Residual Stress to Define Sample Quality," Symposium on 'Quality in Soil Sampling', convened by IGOSS at IV Asian Regional Conference on Soil Mechanics and Foundation Engineering, Bangkok, July.

NELSON, J. D., BRAND, E. W. and MOH, Z. C. (1971), "A Probabilistic Approach to the Correction of Measured Soil Strength," Proc. Conference on Applications of Statistics and Probability to Soil and Structural Engr., Univ. of Hong Kong, Hong Kong, September.

NELSON, J. D. (1972), "Pore Pressure Response Beneath Embankments," Proc. Third Southeast Asian Conference on Soil Engineering, Hong Kong, November.

NELSON, J. D. and THOMPSON, E. G. (1974), "Creep Failure of Slopes in Clay and Clay Shale," Proc. 12th Annual Symposium on Engineering Geology and Soil Engineering, Boise, Idaho, April.

NELSON, J. D. and EDGAR, T. V. (1978), "Moisture Migration Beneath Impermeable Membranes," Proc. 15th Annual Symposium on Engineering Geology and Soil Engineering, Boise, Idaho, April.

MCWHORTER, D. B. and NELSON, J. D. (1978), "Seepage in the Partially Saturated Zone Beneath Tailings Impoundments," Preprint No. 78-AG-306, Soc. of Mining Engrg., AIME Fall Meeting, Lake Buena Vista, Florida, September.

MCWHORTER, D. B. and NELSON, J. D. (1978), "Drainage of Earthen Lined Tailings Impoundments," Proc. Symposium on Uranium Mill Tailings Management, Fort Collins, Colorado.

SHEPHERD, T. A. and NELSON, J. D. (1978), "Long-Term Stability of Uranium Mill Tailings," Proc. Symposium on Uranium Mill Tailings Management, Fort Collins, Colorado.

CRIM, R. G., SHEPHERD, T. A. and NELSON, J. D. (1979), "Stability of Natural Clay Liners in a Low pH Environment," Proc. Second Symposium on Uranium Mill Tailings Management, Fort Collins, Colorado, November, pp. 41-54.

NELSON, J. D. and MCWHORTER, D. B. (1980), "Influence of Impoundment and Substratum Configuration on Seepage from Impoundments," First International Conference on Uranium Mine Waste Disposal, Vancouver, B.C., May, pp. 193-205.

NELSON, J. D. and KANE, Joseph D. (1980), "Failure of the Church Rock Tailings Dam," Proc. Third Symposium on Uranium Mill Tailings Management, Fort Collins, Colorado, November, pp. 505-512.

VEYERA, GEORGE and NELSON, J.D. (1981), "Unsaturated Hydraulic Parameters of Grand Junction Uranium Tailings," Proc. Fourth Symposium on Uranium Mill Tailings Management, Fort Collins, Colorado, pp. 557-578.

NASIATKA, D. M., SHEPHERD, T. A. and NELSON, J. D. (1981), "Clay Liner Permeability in Low pH Environments," Proc. Fourth Symposium on Uranium Mill Tailings Management, Fort Collins, Colorado, October, pp. 627-645.

NELSON, J. D. and MCWHORTER, D. B. (1981), "Water Movement in Non-Impounding Mine Waste Dumps," Workshop on Design of Non-Impounding Waste Dumps, AIME Fall Meeting, November.

FENNER, J., PILZ, J., and NELSON, J. D. (1982), "Spent Oil Shale Waste Management," Presented at ASCE National Meeting, Las Vegas, Preprint No. 82- 032.

WILDUNG, R. E., BOND, F. W., GEE, G. W. and NELSON, J.D. (1982), "Oil Shale Solid Waste Disposal: Estimation of Embankment Physical Stability and the Movement of Water Solutes," Proc. of an International Symposium, The Oil Shale Task Force, August.

WILDUNG, R. and NELSON, J. D. (1982), Water Movement and Engineering Properties of Spent Oil Shale, Proc. Oil Shale and the Environment, Vail, Colorado.

WARDWELL, R. E., NELSON, J. D. and MCWHORTER, D. B. (1982). "Water Movement in Waste Piles from Surface Mining," 1982 Symposium on Mining, Lexington, Kentucky, 7 pages.

WARDWELL, R. E., NELSON, J. D., ABT, S. R., and STAUB, W. P. (1984), "Review of In-Situ Dewatering and Consolidation of Uranium Mill Tailings," Proc. Sixth Symposium on Uranium Mill Tailings Management, Fort Collins, Colorado, February, pp. 499-509.

EDGAR, T. V., NELSON, J. D., and MCWHORTER, D. B. (1984), "Modeling Equilibrium Water Contents and Deformation in UMTRAP Inactive Uranium Mill Tailings Impoundments," Proc. Sixth Symposium on Uranium Mill Tailings Management, Fort Collins, Colorado, February, pp. 549-558.

SMITH, G. M., WARDWELL, R. E., and NELSON, J. D. (1984), "Insitu Strength Measurement at an Inactive UMTRAP Site," Proc. Sixth Symposium on Uranium Mill Tailings Management, Fort Collins, Colorado, February, pp. 639-648.

NELSON, J. D., VOLPE, R. L., WARDWELL, R. E., SCHUMM, S. A., and STAUB, W. P. (1984), "Design Considerations For Long-Term Stabilization of Uranium Mill Tailings Impoundments," Proc. Sixth Symposium on Uranium Mill Tailings Management, Fort Collins, Colorado, February, pp. 495-498.



NELSON, J. D., (1984), "Remedial Measures for Foundations in Expansive Soils" Design of Foundations on Expansive Soils, U. S. Army Corps of Engineers, Vicksburg, Miss.

NELSON, J. D. (1984), "Floor Slabs in Fort Collins, Colorado," Design of Foundations on Expansive Soils, U. S. Army Corps of Engineers, Vicksburg, Miss.

HAMBERG, D. J., and NELSON, J. D. (1984), "Prediction of Floor Slab Heave," Fifth International Conference on Expansive Soils, Adelaide, South Australia, pp. 137-140.

GOODE, J. C., HAMBERG, D. J., and NELSON, J. D. (1984), "Moisture content and Heave Beneath Slabs on Grade," Fifth International Conference on Expansive Soils, Adelaide, South Australia, p. 212-217.

VAN ZYL, D., NELSON, J. D. and WARDWELL, R. E. (1984). Use of Dilatometer and Piezocone Testing in Design of Tailings Reclamation Plans, Paper presented at Fall SME-AIME Mtg., Paper No. 84-435.

SMITH, G. M., ABT, S. R., and NELSON, J. D., "A Prediction Procedure for Hydraulically Placed Tailings, Proceedings of the Geotechnical and Geohydrological Aspects of Waste Management, Fort Collins, Colorado, February 5-7, 1986.

MADRID, L. D. and NELSON, J. D. (1986), "Time Dependent Effects on Shear Strength of Spent Oil Shale," Proc. Geotechnical and Geohydrological Aspects of Waste Management, Fort Collins, Colorado, February, pp. 287 299.

NELSON, J. D. and WRENCH, B. P. (1988) "Construction of Road Embankments Over Very Soft Soils Using Band Drains and Preloading," Second International Conference on Case Histories in Geotechnical Engineering, June.

NELSON, J. D. (1988), "Collapsible Soils: A Case History in Albuquerque," Up and Down Soils, Conference on Moisture - Sensitive Soils, University of Colorado, Boulder, Colorado, March 31, 1988.

NELSON, J. D., (1988) "Hydraulic Fill Structures - A Thing of the Past, or a Thing of the Future...?" Geotechnical News, Vol. 6, No. 1, March.

STRACHAN, C. L. and NELSON, J. D. (1988) "Drainage of Tailings Impoundments - Application of Principles and Experience" Gold Mining 88, ed. C. O. Brawner, 2nd Intl. Conf. on Gold Mining, Vancouver, B. C., Soc. Mining Engrs., Inc., Littleton, Colo., Nov. 1988.

NELSON, J. D. (1989) "Long-Term Stability of Reclaimed Waste Impoundments," Environmental Control and Waste Disposal, Proceedings of the Twelfth International Conference on Soil Mechanics and Foundation Engineering, Rio de Janiero, Brazil, August 1989.

HUANG, D., NELSON, J. D., and SHARMA, S., (1990), "Collapse Potential of Compacted Soil," Proc. 26th Idaho Symposium on Engineering Geology and Geotechnical Engineering, Pocatello, Idaho, March, 1990, 14pp.

NELSON, JOHN D., (1991), "Mine, Mill, and Industrial Waste Management," Panelist review paper, Theme 5: Natural Hazards and Environmental Geotechniques, 9th Asian Regional Conference, Int'l. Soc. Soil Mech. & Fdn Engrg, Bangkok, Thailand, December, 1991.

NELSON, JOHN D., FISCHER, L., HRYCIW, R., and CARLSON, B., (1994), "Effects of Blasting Near Tailings Dams," Presented to Tailings and Mine Waste 94, Colorado State University, Ft. Collins, CO, January, 1994.

MILLER, D.J., DURKEE, D.B., CHAO, K.C., and NELSON, J.D., (1995), "Simplified Heave Prediction for Expansive Soils," 1st Intl. Conf. On Unsat. Soils, Paris, 1995.

GIECK, THOMAS E., SEALY, C., DURKEE, D., OVERTON, D., and NELSON, J., (1997), Case History: "Tailings Dam Reclamation Plan and Improvements, Hot Springs, Arkansas," Proceedings of the Fourth International Conference on Tailings and Mine Waste, January, 1997.

ABSHIRE, M.A., DURKEE, D.B., and NELSON, J.D. (1998) Case History: A field investigation of moisture migration and heave of slabs-on-grade., 2 Intl. Conf. Unsaturated Soils, Beijing.

CHAPEL, T.A., and NELSON, J.D., (1998) Field investigation of helical and concrete piers in expansive soil, 2 Intl. Conf. Unsaturated Soils, Beijing.

OVERTON, D.D., CHAO, K.C., NELSON, J.D., SEALY, C.O. and MOORE J.N.(1998) History , current status, and physical stability of sodium sulfate disposal facility, Owens Lake, California, Tailings and Mine Waste, Colorado State University, Fort Collins CO.

CHAO, K.C., DURKEE, D.B., NELSON, J.D., & MILLER, D.J., (1998) Soil Water Characteristic Curve for Unsat. Soil, 13 SEA Geotechnical Conference, Taipei.

NELSON, JOHN D., DEAN B. DURKEE and JAMES P. BONNER, (1998), "Prediction of Free Field Heave Using Oedometer Test Data". Proceedings of the 46th Annual Geotechnical Engineering Conference, University of Minnesota, St. Paul, Minnesota, February 20.

PERKO, H.A., GREEN, J.R., and NELSON, J.D., (2000), "Preliminary Results from Ultrahigh Vacuum and Cryogenic Dust Adhesion Experiments", Proc. Annual Mtg. Div. Planetary Scientists, American Astronautical Society, Pasadena, CA.

DORNFEST, E.M., NELSON, J.D., and OVERTON, D.D. (2006), "Case History of Two Landslides in Lithostratigraphic Equivalent Formations." In: Proceedings of the 40th Symposium on Engineering Geology and Geotechnical Engineering: Landslides – Investigation, Analysis and Mitigation. May 24-25. Logan, Utah.

NELSON, J.D. and CHAO, K.C. (2010). "Design Principles for Foundations on Expansive Soils." The Hong Kong University of Science and Technology, Hong Kong, China. May 18.

NELSON, J.D. and CHAO, K.C. (2010). "Foundations and Pavements on Expansive Soils." The 2010 International Symposium on Road Engineering. Changsha University of Science and Technology, Changsha, China. June 7.

### **NUREGS**

NELSON, J. D., VOLPE, R. L., WARDWELL, R. E., SCHUMM, S. A., and STAUB, W. P. (1983), Design Considerations for Long-Term Stabilization of Uranium Mill Tailings Impoundments, NUREG/CR-3397, ORNL-5979, US Nuclear Regulatory Commission, 157 pp.

NELSON, J. D., WARDWELL, R. E., ABT, S. R., and STAUB, W. P. (1983), Consolidation of Tailings, NUREG/CR-3204, ORNL/TM-8690, US Nuclear Regulatory Commission.

WARDWELL, R. E., NELSON, J. D., and ABT, S. R. (1983), In-Situ Dewatering Techniques for Uranium Mill Tailings, NUREG/CR-3203, ORNL/TM-8689, US Nuclear Regulatory Commission, Washington, D.C.

NELSON, J. D., ABT, S. R., VOLPE, R. L., VAN ZYL, D., HINKLE, N. E., and STAUB, W. P. (1986), Methodologies for Evaluating Long-Term Stabilization Designs of Uranium Mill Tailings Impoundments, NUREG/CR-4620.

### **PATENTS**

U.S. Patent Number 067773,328, "Retaining Wall System Using Soil Arching."

### **MASTERS DEGREE THESES SUPERVISED**

Shear Strength Characteristics of the Stiff Bangkok Clay, by Diti Hengchaovanich (1969).

Shear Strength Characteristics of Bangkok Clay in the Weathered Zone, by Manoon Arayasiri (1969).

Prediction of Modulus of Deformation of Soil under Vibratory Loading from Static Triaxial Tests, by Chong Nyok Yeong (1970).

Shear Strength Characteristics of Anisotropically Consolidated Stiff Bangkok Clay, by Bashir Ahmad (1970).

Shear Strength of Clay under Vibratory Loading, by Pranai Satyavanija (1970).

Effect of Soil Structure on Dilation of Clays, by Siu Kong Lam (1970).

The Influence of End Restraint and Length to Diameter Ratio on Measured Strength of Soil Specimens, by B. K. Khurana (1971).

Effect of Embedment on Response of Vibrating Footings, by Samuel S. H. Lee (1971).

Shear Strength of Marine Clay under Rapid Transient Loading, by Suvit Viranuvut (1971).

Shear Strength of Compacted Clay under Rapid Transient Loading, by Pipat Taravayut (1971).

Propagation and Screening of Rayleigh Waves, by Peng, Shoei Mun (1972).

Effect of Pressure and Aging on Diagenetic Bonds, by Boonsiang Boonyaratganon (1972).

Performance of Sand Drains at Tha Chang Bridge, by William Ciridon (1972).

Dynamic Penetration of Projectiles, by Udom Udommongkolkul (1972).

Fundamental Studies of Pore Pressure Parameters, by Chitchai Anantasech (1973).

Development of Diagenetic Bonds in Kaolinite, by Ernesto C. Roque (1973).

Probabilistic Definition of Soil Strength over an Area, by Chaisith Keesookpun (1973).

Effect of Sample Type on Soil Strength, by Sriwiroj Chantawong (1973).

Strain Field Beneath Model Vibrating Footings, by Lee, Tsong-Hwei (1973).

Mechanics of Swelling in Expansive Clays, by Andrew A. Porter (1977).

Multiple Stage Triaxial Testing of Clays, by Dean J. Peterson (1980).

Stability of Natural Clay Liners in a Low pH Environment, by Richard G. Crim, (1980).

Unsaturated Flow Parameters of Uranium Mill Tailings, by George E. Veyera, (1980).

Three Dimensional Stress Relaxation in Clay, by Elliott E. Drumright, (1981).

Permeability of Clay Liners in a Low pH Environment, by David M. Nasiatka, (1981).

Shear Strength of Unsaturated Soils, by Hansruedi Schneider, (1981).

Heave Prediction and Moisture Migration Beneath Slabs on Expansive Soils, by Joseph C. Goode, (1982).

The Saturated and Unsaturated Shear Strength of Spent Oil Shale, by Joergen Pilz, (1982).

Oil Shale Waste Management by Janis L. Fenner (1982).

Constitutive Relationships for Unsaturated Uranium Mill Tailings by Greg Sherry (1983).

The Compressibility and Shear Strength of Unsaturated Spent Oil Shale, by Larry D. Madrid (1984).

Evaluation of the Flat Plate Dialatometer as an In-Situ Geotechnical Testing Device for Uranium Mill Tailings, by Lawrence N. Wright (1985).

Settlement and Drainage of Uranium Mill Tailings, by Van E. Komurka (1985).

A Simplified Method for Predicting Heave in Expansive Soils, by Debora Hamberg (1985).

Constitutive Relationships for Collapsible Soils, by Christopher Hatton (1989).

Factors Influencing Collapse in Compacted Soils, by Dalong Huang (1989).

Direct Shear Testing of Soils, by Jamshed Rahman (1991).

Surface Cleanliness Effect on Lunar Soil Strength, by Howard Perko (1996).

Investigation of Variation in Swelling Pressure Values for an Expansive Soil, by Diane K. Reichler (1997).

Moisture Migration Around Piers in Expansive Soil, by Thomas A. Chapel (1998).

Comparison of Predicted Heave Using Oedometer Test Data to Actual Heave, by James P. Bonner (1998).

Pier-Soil Adhesion Factor for Drilled Shaft Piers in Expansive Soil, by Marcia M. Benvenga (2005).

Soil Suction for Clay Soils at Oven-Dry Water Contents and the End of Swelling Conditions, Jason M. Cumbers (2007)

***PH.D. DISSERTATIONS SUPERVISED***

Salinity Effects on Soil Consolidation, by Wanchai Ghooprasert, 1978.

A Methodology for Evaluating Uranium Tailings Management Alternatives, by Thomas A. Shepherd, 1979.

Dynamic Response and Liquefaction of Earth Structures, by Tareg Ahmad Mansouri, 1980.

Secondary Compression of Organic Soils with Fiber Decomposition, by Richard E. Wardwell, 1980.

Unsaturated Embankment Consolidation with Fluid Continuity and Finite Strain, by Joseph P. Martin, (1983).

Moisture Movement in Nonisothermal Deformable Media, by Thomas V. Edgar, (1983).

Prediction of Creep Failure of Excavations in Overconsolidated Clay with Pore Pressure Dissipation, by Ananta Sigit Sidharta (1985).

The Contribution of Matric Suction to the Shear Strength of Unsaturated Soils, by Elliott E. Drumright (1989).

Osmotic Suction as a Valid Stress State Variable in Unsaturated Soils, by Debora J. Miller (1996).

Edge Moisture Variation Distance and Active Zone Depth, by Dean B. Durkee (2000).

Design Principles for Foundations on Expansive Soils, by Kuo-Chieh Geoff Chao (2007).

#### **EXTERNAL EXAMINER**

The Evaluation of the Interslice Side Forces for Slope Stability Analysis by the Finite Element Method, M.S. Thesis by G. Ward Wilson, 1982, University of Saskatchewan, Saskatoon.

Instruments for Laboratory and In-Situ Determination of Lateral Soil Pressure, Ph.D. Thesis by Z. Ofer, 1986, University of the Witwatersrand, Johannesburg, South Africa.

Hydraulic Fill, Ph.D. Dissertation by Angela Kupper, 1991, University of Alberta, Edmonton, Alberta.

Evaluating Components of the Water Balance for Waste Deposits, by K.I. Roussev, University of the Witwatersrand, Johannesburg, South Africa (1995).

Optimization of Tailings Dam Performance Through Controlled Deposition Practice, Ph.D. Dissertation by Gordon Ian McPhail, University of the Witwatersrand, Johannesburg, South Africa (1995).

Characterization and Natural Processes Enhancing Dry Landscape Reclamation of Fine Processed Mine Wastes, PhD Dissertation by Richard P. Stahl, University of Alberta, Edmonton, Alberta, Canada (1996).

Use of Piezocone to Characterize Tailings, University of British Columbia, Vancouver, B.C., Canada (1999).