Nirmala Gnanapragasam Ph.D., P.E.
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EDUCATION:

Ph.D. Civil Engineering, Northwestern University, 1993.
M.S. Civil Engineering, Northwestern University, 1988.
B.Sc. Civil Engineering (First Class Honors), University of Moratuwa (Srilanka), 1985.

ACADEMIC EXPERIENCE

Associate Professor 1998 – Present Dept. of Civil & Env. Eng
Assistant Professor 1993 – 1998 Seattle University

- Courses taught: Engineering Geology, Soil Mechanics, Foundation Design, Strength of Materials, Water Resources, Fluid Mechanics, Introduction to Civil Engineering
- Affiliate Director, Project Lead the Way – Engineering, Washington State (from Fall 2009)
- Senior Design coordinator of the Department (from Fall 2004)
- Faculty Advisor for the following industrially sponsored senior design projects:
  - Comparison of storm water models used in Western Washington (yr ’07-08)
  - Civil Design for a Mixed Use Development in Seattle (yr ’06-07)
  - Community Recreation Club Reconstruction in Bellevue (yr ’05-06)
  - State-Government-Developer Coordination of Highway Improvements (yr ’04-’05)
  - Design of a monitoring method for Soil Stormwater detention system ('03-'04)
  - Conceptual design of Capitol Hill Light Rail Station ('00-'01)
  - Geotechnical Study of Seattle University Student Center ('99-'00)
  - Union-Massachusetts Transmission line Reroute and Replacement ('98-'99)
  - Bear Creek Culvert Retrofit for Fish Passage ('97-'98)
  - Holly Park Storm Drainage System Design ('97-'98)
  - Partial Seismic Retrofit of Skokomish River Bridge ('96-'97)
  - Winterwood Estate Flood Control Study ('96-'97)
  - Design of a Landfill liner for Roosevelt Regional Landfill ('95 -'96)
  - Construction Materials from Pulpmill inorganic solid residuals ('95 -'96)
  - Design of a stormwater treatment system for the Everett Pulp Mill ('94 -'95)
  - Design of a stream crossing in phase II of the Iron Goat Trail construction ('94-'95)
  - Engineering solutions to a storm water overflow problem ('93 -'94),
  - Design of a discharge flume structure for White river hydro power project ('93-'94)

Instructor Dept of Civil Engineering
1990 to 1992 (summers) Northwestern University

Taught a course titled “Introduction to Engineering” in the National High School Institute Program

Teaching/Research Assistant Dept of Civil Engineering
1986 to 1993 Northwestern University
Teaching Assistant for Geotechnical Engineering and basic engineering courses
Carried out research in the following projects:

- Microstructural changes in clay-sand composites in the presence of organic liquids
- Adsorption characteristics of Ra-226 onto bentonite in uranium mill tailing wastes
- Triaxial testing of Evanston beach sand to determine strength parameters
- Vegetative reclamation of pyretic coal refuse

PROFESSIONAL EXPERIENCE:

Senior Geotechnical Engineer (2007 – present) Shannon & Wilson Inc.
Geotechnical Engineer (Summers 98, 99) Seattle, Washington .

Washington SR 167 HOT Lane project
Designed the foundations for luminaires, gantry polls & sign structures
Analyzed detention ponds for stability, seepage and settlement
Carried out QA/QC for the design of noise walls

Dakota, Minnesota and Eastern (DM&E) Railroad project
Assisted in the development of a data base for the Subsurface Exploration Program
Maintained and coordinated field exploration schedule and data

Seattle Sound Transit - Link Light Rail Project
Researched the tunnel construction case histories in Seattle area for the Geotechnical Investigative Report (GIR)
Prepared the Geotechnical Data Report (GDR) for the Link Light Rail Project
Prepared the geologic profiles along the various proposed light rail alignments

Geotechnical Engineer Woodward Clyde Consultants
July 97 - September 97 Seattle, Washington
Performed liquefaction, lateral spread and seismic analyses for a bridge site in Oregon.
Carried out slope stability analysis to increase the capacity of a dam in Washington state.
Worked on the micro-zonation study of the Seattle Area for Seismic Analysis.
Carried out preliminary deep foundation design for a bridge pier in Oregon.

PUBLICATIONS:

Kuder K., Gnanapragasam N. (2011). "Implementing Peer-Reviews in Civil Engineering Laboratories", Proceedings of the Annual Conference of the American Society of Engineering Education.

Gnanapragasam N. (2010). "Evolution of Technical Writing in Senior Design – A Case History", ASEE Advances in Engineering Education, Volume 2(1).

Gnanapragasam N., Kuder K., Dragovich J.J. (2008). "Comparison between Grade Earned in a Course and Performance in a simulated FE Exam for Mechanics Related

Courses", Proceedings of the Annual Conference of the American Society of Engineering Education.

Gnanapragasam N. (2008). "Industrially Sponsored Senior Capstone Experience: Program Implementation and Assessment", ASCE Journal of Professional Issues in Engineering Education and Practice, July.

Gnanapragasam N. (2007). "Program Outcome Assessment in an Industrially Sponsored Senior Capstone Course", Proceedings of the Annual Conference of the American Society of Engineering Education.

Gnanapragasam N. (2007). "Exploring Math through Math Competitions at the Elementary School Level: Case Study of a K-12 Outreach", Proceedings of the Annual Conference of the American Society of Engineering Education.

Gnanapragasam N. (2007). "Evolution of Technical Writing in Senior Design - A Case History", National Capstone Design Course Conference, Boulder, Colorado.

Kuder K, Gnanapragasam N. (2007) "Undergraduate Research Opportunities in Senior Design", National Capstone Design Course Conference, Boulder, Colorado.

Gnanapragasam N. (2000). "Active earth pressure in cohesive soils with inclined ground surface", Canadian Geotechnical Journal, Vol 37, February, 171-177.

Gnanapragasam N, Barayuga E, Cushman R, Parico V, Richards L. (1998). "Construction Materials from Pulpmill Solid Residuals - A Feasibility Study", Technology Journal of the Franklin Institute, Vol 335A, August, 35-42.

Gnanapragasam N., Lewis B.G., Finno R.J. (1995). "Microstructural Changes in Sand-Bentonite Soils when Exposed to Aniline", ASCE - Journal of Geotechnical Engineering, Vol 121(2), 119-125.

Gnanapragasam N., Lewis B.G. (1994). "Effects of Xylene and Aniline on Bentonite Mineralogy", Agronomy Abstracts.

Lewis B.G., MacDonnell M. M., Gnanapragasam N. (1992). "Application of Soil Physical, Chemical, and Bioassay Methods to Coal Refuse", ASTM Special Technical Publication, No 1162.

Lewis B.G., MacDonnell M. M., Gnanapragasam N. (1992). "Pyritic Waste from Pre-combustion Coal Cleaning", Coal, Energy, and Environment Conference, Czechoslovakia.

PROFESSIONAL GEOTECHNICAL ENGINEERING REPORT:

A Final Geotechnical Data Report for Sound Transit Link Light Rail Project: Report prepared for the Puget Sound Transit Consultants by Shannon and Wilson Inc., Seattle, October 1998.

GRANTS & AWARDS:

National Council of Examiners for Engineering and Surveying (NCEES) Engineering Awards (two awards), 2013.

National Council of Examiners for Engineering and Surveying (NCEES) Engineering Awards (two awards), 2012.
MATHCOUNTS Head Coach of Fourth Place Team, Seattle Chapter (team of sixth graders advancing to State Level Competition), 2012.
National Council of Examiners for Engineering and Surveying (NCEES) Engineering Awards (two awards), 2011.
National Council of Examiners for Engineering and Surveying (NCEES) Engineering Award, 2009.
National Science Foundation – Research Opportunity Award, 2006.
Academic Engineer of the Year - Puget Sound Engineering Council, 2006.
Thomas J. Bannan Endowed Chair, 2000- 2002.
Bannan Foundation Grant for Laboratory improvement, 1998.
Grand Prize Winner of Third Annual Padnos Design Competition, Sponsored by Grand Valley State University, American Society of Mechanical Engineers and Padnos Foundation, 1996.
Seattle University Summer Faculty Fellowship, 1994.

SERVICES TO THE UNIVERSITY/PROFESSION/COMMUNITY:

- Member of the Washington State Board of Registration for Professional Engineers and Land Surveyors (from Fall 13)
- Affiliate Director for Engineering – Washington State, Project Lead the Way (PLTW), Fall 2009 – present.
- Member of the Mountlake Terrace High School STEM Program Partnership team, Fall 2011 – present.
- Design team member of the Washington State Leadership and Assistance for Science Education Reform – Science, Technology, Engineering and Mathematics (LASER-STEM) program, Fall 2011.
- Member of Seattle University Goldwater Scholarship Review Committee, Fall 2010 – 2012).
- Peer Consultant, Seattle University Center for Excellence in Teaching and Learning (CETL), 2009 – present.
- President of American Society of Civil Engineering ASCE Seattle Section, 2003- 04.
- Faculty Advisor to the Seattle University ASCE Student Chapter, 1997 – 2010.
- Faculty liaison for the American Public Works Association, 1994 to present.
- Site Coordinator, Washington State Math Council's Elementary and Middle School Math Olympiad, Seattle University, 2002-present
- Volunteer Math Coach, local elementary school, 2000-present.
- Faculty Technology Committee, 2000 - 2009.
- Science and Engineering Curriculum Committee, 2003-2007.
- Science and Engineering School Personnel Committee, 1999-2000.
- Secretary of the ASCE Seattle section Geotechnical Engineering group 1996-1997.

- Chair of the ASCE Seattle section Geotechnical Engineering group, Annual Spring Seminar Planning committee, 1996-1997.
- Sullivan Leadership Awards Committee, 1995-1997.

PROFESSIONAL REGISTRATION:
Professional Engineer, State of Washington, 1998.

PROFESSIONAL MEMBERSHIP:
Member of the American Society of Civil Engineers.
Member of the American Society of Engineering Education.
Member of the American Public Works Association.