

---

**AOMAR BENSLIMANE, Ph.D.**

AB4World, President

Address: 139 Linnet st Bayonne, NJ 07002

Email: [abensnyc@aol.com](mailto:abensnyc@aol.com),

[abenslimane@ab4world.com](mailto:abenslimane@ab4world.com)

[www.AB4World.com](http://www.AB4World.com)

Cell: 201 388 1586

**Education**

Ph.D., Civil Engineering, Polytechnic University of New York, 2000; M.S., Geotechnical Engineering, Polytechnic University of New York, 1998; M.S, Civil Engineering, The National School of Bridges and Roads (ENPC), Paris, France, 1993; B.S., Civil Engineering, The National Institute of Civil Engineering of Tizi-Ouzou, Algeria, 1988.

**Professional Affiliations**

- American Society of Civil Engineers (ASCE): Associate Member.
- International Society of Micropiles (ISM), Founding Member
- Deep Foundation Institute (DFI): Member.
- DFI/ADSC Micropile Committee: Member.
- International Society of Soil Mechanics and Foundation Engineering (ISSMFE), Member.
- British Institution of Civil Engineers (ICE), Member (UK-England)
- Algerian Competence Association (ACA), Member.
- Association des Anciens de l'Ecole Nationale des Ponts et Chaussees (AAENPC), Member.
- Amazigh Cultural Association of North America (ACAA), President.

**Key Qualifications**

Aomar Benslimane, an Independent Consultant is experienced in geotechnical investigations and design for transit and highway projects. Aomar's design and analysis experience encompasses the full spectrum of geotechnical engineering, including foundation engineering, excavation supports, underpinning, embankment engineering, seismic stability evaluation, ground improvement, ground reinforcement, and subsurface investigations. Aomar's experience also includes the extensive experience gained through major tunneling jobs such as the No 7 Subway Liner Extension Project (NYCT), the Atlantic Avenue Rehabilitation Project (NYCT), the East Side Access Project (MTA), the Delaware Aqueduct and the Croton Water Treatment Plant Conveyance Tunnel Project (DEP) mainly in the area of rock tunnel design, cut and cover design, instrumentation design, impact assessment of blasting induced vibrations on tunnel construction and groundwater flow analysis.

Aomar Benslimane was the recipient of the 2005 William Barclay Parsons Fellowship. Aomar's research objectives were to establish state-of-the-art design guidelines for predicting ground-borne vibrations according to various tunneling methods in different types of ground. These guidelines are extremely useful in determining the most appropriate construction methods, taking into account environmental impact, public relations issues, productivity and cost-effectiveness.

Aomar is also heavily involved in non profit activities as currently serving as the President of the Amazigh Cultural Association in North America (ACAA- [www.tamazgha.org](http://www.tamazgha.org)) which is organized and operated exclusively for cultural, educational, and scientific purposes to contribute to saving, promoting, and enriching the Amazigh (Berber) language and culture.

Aomar has also a strong interest in Foreign Affairs, Diplomacy and researching and fighting for solutions for global challenges such as the Global Climate Change Crisis, the Global Economic Crisis and Human Rights through his membership (i.e UN University, ACLU, NRDC) involvement and attendance of the main related events and seminars held at the United Nations, the NYU Poly Institute and the Columbia University in New York City. Aomar is a strong supporter of the GLOSAS/USA and the Global University System (GUS) which is a worldwide initiative to create advanced telecom infrastructure for accessing educational resources around the world to achieve "education and healthcare for all," anywhere, anytime and at any pace.

**2008-October 2009 Halcrow Group Limited**USA: New Jersey Transit

Review of Tender phase documents, Design of Initial support for TBM Tunnels and Cross Passages for the Manhattan and Palissade Tunnels Contract Packages.

USA: Virginia Department of Transportation (VDOT) MT-DT-MLK Freeway Extension-

Prepared preliminary operation and maintenance capital cost estimate for the immersed tube tunnel at MT-DT-MLK Freeway Extension.

Ireland: DART Underground Dublin's Interconnector

In an ARUP Halcrow Joint Venture, reviewed the preliminary geotechnical and geological information for the preliminary design of the temporary support of the main stations within the reference design scope. Provided recommendations with regards to the construction methodology (TBM vs Drill and Blast/Roadheader) in terms of induced vibration levels. The client was The Irish Rail Iarnród Éireann.

USA: No 7 Subway Line Extension, New York , NY

Performed a study to review the current project requirements for the strength of grout used to backfill the annulus that is created between the rock and the outside of the TBM segmental lining. The client was S3II Tunnel Constructors JV (S3II JV).

USA: Virginia Department of Transportation (VDOT) MT-DT-MLK Freeway Extension-

Prepared preliminary operation and maintenance capital cost estimate for the immersed tube tunnel at MT-DT-MLK Freeway Extension.

USA: San Francisco Bay Area Rapid Transit (BART).

Conducted preliminary review of the available studies on the impact of the construction of the MUNI Central Subway on existing BART facilities. Emphasis was on the potential movements/settlements.

GHANA: Ghana Port and Harbour Authority (GPHA).

Conducted review of the available geotechnical information for the dredging feasibility studies of the Takoradi and Tema Port and container terminal expansion.

USA: Norfolk Naval Shipyard, Portsmouth, Virginia.

Conducted review of the pile driving records and dynamic analysis pile results for the repair to berth 3 and 4 of the existing bulkhead.

USA: District Dock Upgrade, Boston, Massachusetts.

Prepared preliminary design and construction specification for the district dock Micropile foundation upgrade.

USA: New Jersey Transit - Access to the Region's Core (ARC) - Trans Hudson Express (THE) Tunnel - New York and New Jersey.

Preliminary review of the Final Environmental Impact Statement (FEIS) for the Access to the Region Core's Study for bidding purposes. Performed preliminary review and design for the tender design phase.

USA: Coquina Cost Seawater Desalination Alternative Water Supply Project – Florida.

Review of the geotechnical and geological data and issued recommendations with regard to the appropriate construction methodology for the Intake and Outlet tunnel options for the evaluation of the Coquina Cost Seawater Desalination Alternative Water Supply Project as an alternative water source.

Canada: The Vancouver Evergreen Light Rail Project–British Columbia

Review and Design Input – TBM in soft Ground. Performance Requirements, Assessment of boring machine, feasibility of soil conditioning agents and specs – Ground Settlement Analysis.

1998 – 2008 Parsons Brinckerhoff – PB Americas

### Transit Systems

- Metropolitan Transit Authority (MTA), New York City, East Side Access Project:
  - Review of preliminary design and design of rock Support for escalator wellways 2, 3 and 4.
  - Review of design computations using the 3 dimensional software Unwedge v3.0 carried out for the design of the initial support for the GCT 3 and 5 Wye Caverns of the East side Access project. (2008)
- New York City Transit (NYCT), New York City, No 7 Subway Line Extension Project:

Lead Geotechnical /Tunnel Engineer: major duties within the No 7 Subway Line Extension Project involved assignments for the preparation of the bid documents (GBR, GDR, Contract Drawings, and Specifications), various design assignments such as the design of the Tenth Avenue cut and cover station. Main focus was on selection of the support system, design criteria and proposed excavation methodology. Main design assignments:

- Review of soil laboratory data, boring log information to derive geotechnical design parameters (Geotechnical Baseline Report).
- Earth Pressure computations for the cut and cover structure for the permanent conditions.
- Earth pressure computations for temporary earth support design (soldier pile lagging system).
- Evaluate seismic parameters for axial and curvature deformation analysis and for racking/ovaling analysis under vertically propagating shear waves.
- Evaluate earthquake pressure due to earthquake effect for temporary soldier pile lagging temporary support at 10<sup>th</sup> Avenue station entrance using the procedures listed in Division 1A of AASHTO for estimating the pseudo static earth pressures for retaining design (Mononobe Okabe method).
- Design of the rock support using SWEDGE (Rocscience 1993) and computation of potential rock wedge
- Prediction of groundwater inflow into running tunnels based on Heuer empirical and Raymer Statistical Approach.
- Drafted recommendations for proposed vibration and settlement criteria to be used for the construction of the Number 7 Line Subway Extension in the vicinity of the 11<sup>th</sup> Avenue Viaduct and associated NYCDOT structures.
- Draft/review of background noise and vibration report to determine levels of pre-existing background noise and vibrations occurring at various times of the day within potentially sensitive existing facilities adjacent to the construction activities
- Design of pumping tests for use in evaluating the geohydrological characteristics of the various strata for the design of a groundwater control system and to estimate the pumping rate during the construction of the cut-and-cover excavation at the Tenth Avenue Station area.
- Drawing production for the 60% submittal (Contract D310) which includes the geotechnical profiles, rock support, review of existing building data, geotechnical instrumentation, support of excavation and suggested construction sequence.
- Design of rock bolts used as tiedowns to resist uplift forces at Site A, conducted a numerical analysis using FLAC<sup>2D</sup> (Itasca) for the pillar stability assessment at Station Sta C2 19+75, design of drilled shaft to support column loads over site A, design of rock bolts used as tiedowns to resist uplift forces at Site P – B2 Level, performed a study using empirical, numerical (FLAC<sup>2D</sup>, and SWEDGE) for the bearing capacity estimate and assessment of impact of column load from over-build structure on roof of site J and P utility and access tunnels.

(10/2004 – 2008)

- Metropolitan Transit Authority (MTA), New York City, East Side Access Project:
    - Performed settlement analysis along the alignment of Manhattan bored tunnels due to eventual dewatering for risk assessment and building protection purposes.
    - Reviewed the design of the support system for the shafts and escalators in the Grand Central Terminal.
    - Performed preliminary prediction of groundwater inflow into the Station Caverns during construction. The prediction was based on packer testing conducted during the geotechnical investigation.
    - Performed lateral earth pressure calculations on temporary and permanent walls for the Queens cut and cover areas. Pressure diagrams were developed for rigid and flexible walls with multiple levels of support and for cantilever walls or walls w/single level of support.
    - Performed slope stability analysis, design analyses for temporary and permanent walls for the Queens cut-and-cover area, drafted preliminary contract specifications, performed design calculations for the rock anchor embedment length to support an 86 foot (26.21 meter) high slurry wall.
    - Performed analysis of consolidation data, settlement calculations, and foundation design for the high bridge and the fresh pond rail yards (train maintenance facilities).
    - Coordination of site investigation program and evaluation of geotechnical parameters.
    - Performed falling head, packer permeability tests, inspection of observation well installation, oriented rock coring, goniometer readings on oriented rock cores in order to define dip angles and dip directions of rock joints. Other responsibilities included rock classification (Q System) for design of initial supports; interpretation of goniometer readings; joint data reduction using the software DIPS (Rockscience, 1989-1998), interpretation of in-situ packer permeability test results; reviewing of in-situ test results such as hydraulic fracturing test, borehole dilatometer test, and borehole televiewer test.
    - Contributed to the geotechnical data report (GDR) summarizing the field investigation results and the geotechnical Design Summary Report (GDSR) for the queens Segment for open cut excavation at Belmouth (Contract CQ026) and the Cut and Cover Section (Contract CQ028).
    - Designed the underpinning system under Northern Boulevard using Micropiles and drafted the constructions specifications for contract CQ026 Contract.
    - Conducted a thorough and comprehensive review of the available cases studies on TBM induced noise and vibrations for specification writing purposes, coordinated a program for the background noise and vibration monitoring program along the Manhattan alignment for the areas where drill and blast option will be used for tunnel excavation.
    - Designed the layout of the instrumentation program for contract CM009 (Manhattan Bored Tunnels), and drafted contract specifications for geotechnical, surface and structure Instrumentation.
    - Conducted a thorough vibration attenuation study within contract CM009 and CM012, to investigate any impact the vibrations generated by blasting may have on the Construction of vertical ventilation, stair and elevator shafts, escalator wellways, and inclined escalator shafts to take place from the lower level of GCT and that will involve controlled blasting directly below and adjacent to the operating MNR tracks and adjoining MNR and building structures.
    - Performed computation of lining loads to derive potential uniform and eccentric rock loads for the permanent concrete lining design for the GCT station caverns (Contract CM012) using the RMR system, Wedge analysis with the software UNWEDGE (Rockscience, 1989-1998), and the software Phase<sup>2</sup> (Rockscience, 1998-2001) for the shear zone areas.
- (06/2001 to 07/2004)**
- New York City Department of Environmental Protection (NYCDEP), Rondout-West Branch (RWB) Tunnel: Performed water infiltration rate prediction of the dewatered Rondout-West

Branch (RWB) Tunnel using 2 methods: (i) an analytical approach taking into account hydraulic and mechanical interactions between concrete liner and the surrounding rock mass, and (ii) two dimensional finite element seepage analysis using the finite element program SEEP/W.

(07/2004 to 08/2004).

- Long Island Railroad - Reahabilitation of Port Washingtgn Bridge - Queens: Review of soil nail wall design, soil nail installation and instrumentation Spec. **02/2008**
- Croton Water Treatment Plant (CWTP) Tunnels: Contract HED 543(NYCDEP): Eastview Alternative
  - The CWTP will provide filtration and disinfection to the Croton Water Supply System before the water is supplied to consumers in New York City and portions of upstate New York. The Eastview Site, located in the Town of Mount Pleasant, Westchester County, New York, is one of three alternative sites in consideration of the CWTP and if built, will incorporate a raw water tunnel that connects the Croton WTP to the New Croton Aqueduct.
  - Performed a Tunneling Impact assessment study as part of the feasibility study for the Croton Water Treatment Plant (CWTP) at the East view site for the NYCDEP. Performed Contract drawings and design review, designed the initial rock support, designed the instrumentation layout and conducted a study for tunnelling impact assessment. Vibration disturbance, ground loss and groundwater drawdown due to drill and blast or Roadheader excavation were investigated. **(08/2004 to 10/2004)**
- Croton Water Treatment Plant (CWTP) Tunnels: Contract HED 543(NYCDEP): Moshulu Golf Course Alternative: Conducted an assessment/evaluation of the impacts of blast induced vibrations imposed on City Tunnel No. 1 due to drill and blast construction of the Raw Water Tunnel (RWT) and Treated Water Tunnel (TWT). Vibrations due to the drill and blast operations from the Treated Water Tunnel were also assessed for several buildings adjacent to the TWT alignment and recommendations for blast vibration limits and monitoring of City Tunnel No. 1 were made. **(11/2004 to 11/2004)**
- Croton Water Treatment Plant Tunnels and Aqueduct Rehabilitation: Observed spoil drilling and rock coring (boring inspection), performed rock permeability testing and calibrated the packer testing equipment. **(2001)**
- Belmont/Southport Inteprlant Connection (City of Indianapolis, Department of Public Works): This interplant connection that will connect the Belmont Advanced Wastwater Treament (AWT) plant to the Soutphort plant is a major component of trhe city's overall plant to control combined sewer overflow discharge (CSO): At the Advanced Facilities planning phase, prepared the Geotechnical Data Report (GDR) and the Geotechnical Intepretive Report (GIR). At the final design level. Performed settlement analysis to assess the impact induced by the soft ground tunnleing on the exisitng structures. Analytical and numericla procedures were used (PLAXIS). Drawings and contract specifications for the instrumentation part were produced. **(10/06 to 12/06 and 12/07 to 02/08)**
- Washington Metropolitan Area Transit Authority (WMATA), St. Elizabeth Hospital Slope Restoration, and Washington, DC: Conducted preliminary slope stability analysis (XSTABL program) for the existing slope of the St. Elizabeth Hospital complex in Southeast Washington, DC. **(1999)**
- Federal Highway Administration/ National Highway Institute (FHWA/HNI) Training Course in Geotechnical and Foundation Engineering: Contributed to module 3, student exercises, a reference manual and course presentation, titled "Soil Slopes and Embankments". This module was one module out of 12 modules that addresses the full spectrum of geotechnical and foundation engineering. **(1999)**

- New York City Department of Environmental Protection (NYCDEP), Reconstruction of Shaft 23 Valve Chamber & Associated Improvements, Brooklyn: Reviewed underpinning design using Micropiles. (2002)
- New York City Transit Authority (NYCTA), Reconstruction of the Atlantic Avenue Complex, Brooklyn Subway Station: As a resident engineer, reviewed shop drawings, supervised the installation of the test piles, attended coordination meetings with the client (NYCTA), the contractor Schiavone Construction Company/Trevis-Icos, the project manager (Turner Construction), Langan engineering and Mueser Rutledge Consulting Engineers as the field inspectors for the client and the contractor respectively. He also observed and witnessed four pile load tests, reviewed the contractor's load test reports, prepared a load test report, and provided recommendations for the installation of the production piles.
- Port Authority of New York and New Jersey (PANYNJ), J. F. Kennedy International Airport – Airtrain Terminal, Jamaica Station: For on-call services for the Port Authority of New York and New Jersey, observed and witnessed the installation of three minipiles at the Westerly bridge and Portal Areas on Platform C Tracks 4 and 5, coordinated with the Port Authority of New York and New Jersey, Perini/Tutor Saliba (Contractor), Bechtel (PM), prepared a memorandum report summarizing field observations, and provided recommendations for the installation of the production piles.
- New York City Department of Environmental Protection (NYCDEP), Croton Water Treatment Plant Tunnels and Aqueduct Rehabilitation: observed spoil drilling and rock coring (boring inspection), performed rock permeability testing and calibrated the packer testing equipment.
- World Trade Center (1 and 9 Subway Lines): Contributed to the preliminary feasibility study to assess the various options for the World Trade Center Reconstruction.
- New York City Department of Environmental Protection (NYCDEP) - Delaware Aqueduct Contract DEL-134: observed soil and rock drilling/coring during directional drilling conducted in the inclined and horizontal borehole RHB-1, and supervised geophysical logging in the hole.
- Amtrak – East River Tunnel – Long Island City Ventilation Structure Rehabilitation Project: reviewed the underpinning design using micropiles, and performed construction Specifications review. The design called for a 40-ton design axial load pile and a 110-ton design axial load pile socketted into rock.

### Highways

- I78 Roadway Rehabilitation for the Delaware River Joint Toll Bridge Commission, New Jersey: Provided technical assistance and on site supervision for primary and secondary Drilling and Surry Grouting for three Trial Test Areas for roadway rehabilitation. (02/2008)
- Florida Turnpike, Broward County, Florida: Provided technical assistance for contract drawings and specifications review for micropile design, load testing and production micropile installation in Karstic zone.
- Route 1 & 9T Ultimate Improvements, New Jersey: Provided technical assistance and review for the pre-construction vibration monitoring proposal of nearby existing buildings.
- Route 21, Section 2N, Newark, New Jersey: Tasks included development of design soil parameters, slope stability (XSTABL) and settlement analyses (EMBANK) for the design of a 40-foot-high (12.2-meter-high) embankment overlying organic silts, compressible silts, and clays. The embankment required staged construction in combination with vertical drains and preloading. Performed pile group analysis using the GROUP program.
- Route 168 over North East River, Chesapeake, Virginia: Design of embankment slope reinforced with geogrids. Slope stability was analyzed both locally (with the embankment itself) and globally (embankment and foundation). Stabilization was required due to a low safety factor. Using

XSTABL, the number of layers of geogrids, the type, the vertical spacing, and the placement limits were calculated. To increase the global slope stability, steel sheet piles were also proposed and the design completed using the computer program for design and analysis of sheet-pile walls by classical methods (CWALSHT) including Rowe's moment reduction. The software is supplied by US Army corps of Engineers.

- I-564 Intermodal Connector, Norfolk, Virginia: performed settlement analysis (EMBank program) and slope stability evaluation for roadway ramp embankment and retaining walls (XSTABL program).
- Route 29 over Marina River, Virginia: performed bearing capacity and settlement analysis for drilled shafts socketted into rock.
- I-84/I-91 Sign 28, Temporary Earth Support- Soil Nail Wall, Adriaen's Landing- Hartford, Connecticut: reviewed the underpinning design using micropiles, performed quantity estimate, and performed construction Specifications review.
- New Jersey Department of Transportation (NJDOT) - Route 1 & 9T Ultimate Improvements - Replacement of Route 1 & 9 Bridge Over St. Paul's Avenue in Jersey City, New Jersey: drafted vibration monitoring proposal and performed cost proposal review
- South Carolina Department of Transportation (SCDOT) - Copper River Bridge: performed foundation design support using Micropiles for abutment #2 of the Cooper River Bridge and drafted construction specifications.
- Virginia Department of Transportation (VDOT) - Route 234 Slope Failure – Abutment B of the NorthBound Bridge Over Occoquan River: Performed a feasibility study and developed alternative concepts for the stabilization of the failed area and additional remedial work required. The main options investigated are the Drilled Shafts Walls, Micropile Walls, and Concrete Reaction Block/Bearing Pad Walls.

#### **Building Sites**

- New York City School Construction Authority (NYCSCA), New York City: inspection of site investigation, preparation of boring logs, coordination with client (NYCSCA) and drilling company (Jersey Boring and Drilling Co), reviewing and report writing.
- Fashion Institute of Technology, New York City: Wrote a proposal in conjunction with the structural group. The study included a vibration study, a structural analysis and a vibration monitoring program.
- Virginia Port Authority (VPA) Upland Instrumentation: slope stability analyses using XSTABL to derive recommendations for stockpiling surcharge fill material.

#### **Previous Experience**

Prior to joining Parsons Brinckerhoff (PB), Aomar's project experience with other engineering consulting firms included:

- Seismic Behavior of Micropile Systems, Federal Highway Administration (FHWA): as a research fellow, Aomar conducted Ph.D. research within the Franco-American cooperative research program on the seismic behavior of micropile systems. The research was conducted in collaboration with the FOREVER (Fondation RENforce VERTicalement) French program, focused on centrifuge testing of micropile systems carried out by Polytechnic University of New York to establish design guidelines for the seismic behavior of micropile systems.
- Drilled and Grouted Micropiles—State-of-Practice Review, FHWA: contributed to the second volume of this publication (Bruce and Juran, 1997), summarizing the design guidelines for single, group and networks of micropiles. This publication led to the current FHWA publication No FHWA-SA-97-070 (June 2000) titled "Micropile Design and construction Guidelines – Implementation Manual".

- Polytechnic University of New York: as a research assistant, Aomar worked in collaboration with a construction contractor (Nicholson Construction Company) on evaluating the state-of-the-practice for design of micropiles, and the assessment of design guidelines for single, group and networks of micropiles.
- Private Consulting Firm, Paris, France (Terrasol): designed foundations, soil reinforcement and conducted slope stability analyses on various projects. Field work consisted on full scale instrumentation using the Freyssisol-Websol reinforcement system which results were incorporated in the Masters thesis titled "Full Scale Experimentation using the Freyssisol-Websol System Earth Reinforcement System and Validation of the Software TALREN for Slope Stability Analysis".
- Algerian Public Works, Algeria: as assistant resident engineer, supervised construction works; prepared contract documents, shop drawings, and daily construction reports; and maintained communications with owners and subcontractors.

#### **DFI/ADSC Micropile Committee Major Activities**

- Contributed to the Drafting and Review of the AASHTO LRFD Design and Construction Specifications for Micropiles submitted to AASHTO T-15 Committee on May 2003.
- Contributed to the Short Course SC4 - Micropiles - Developments in Design & Construction that took place at the Geo Support Conference in Orlando, Florida on January 2004. The short course was sponsored and presented by the ADSC/DFI Micropile Committee. This course presented the latest developments in the state-of-the-practice on micropile design, procurement, QA/QC, and construction. Topics included design and construction applications, construction methods, load testing, procurement/specification recommendations, worked design example, and feasibility/cost data. Case studies were used to show how design concepts have been successfully applied in actual projects.  
**Instructors:** Tom Armour, DBM Contractors, Inc.; Donald Bruce, Geosystems; Tom Richards, Nicholson Construction; John Wolosick, Hayward Baker; Aomar Benslimane, Parsons Brinckerhoff and Allen Cadden, Schnabel Engineering.
- Conducted a Micropile Design and Construction Seminar in Philadelphia (Speaker) within the DFI/ADSC activities on November 2004.

#### **Extra Curriculum Activities**

- Attended a class within the New York University School of Continuing and Professional Studies (NYUSCPS) (February 11 – April 14, 2008) titled "Restoring America's Image Abroad: New Challenges in Public Diplomacy". The Research paper focused on "The Global Warming Environmental Crisis and the United States: Yesterday, Today and Tomorrow."
- Attended an intensive seminar on Global Affairs at NYU from July 7 to August 1<sup>st</sup> in 2008. This program covered the political, economic, social, environmental and cultural issues that shape relations throughout the world.
- Attended the Panel Discussion organized by the Permanent Mission of the Republic of Maldives to the United Nations "Human Dimension of Global Climate Change: Addressing the Economic, Social and Human Rights Implications".
- As President of the Not-for-Profit Organization (NGO) ACAA, attended the 8<sup>th</sup> Session of the Permanent Forum of the Indigenous Issues at the United Nations in New York City. The permanent forum was created by the United Nations Economic and Social Council (ECOSOC) mainly to discuss Indigenous issues within the Council, including Economic and Social Development, Culture, Environment, Educations, Health and Human Rights. The Climate Change and its impact on the Indigenous populations were one of the main topics discussed at the Forum.
- Attended the UNU Current Affairs Lecture by Dr Francois Bourguignon "The Global Crisis on September 10<sup>th</sup>, 2009.



- Attended the H<sub>2</sub>O9 Forum “Water Challenges for Coastal Cities – From the Dutch Delta to New York Harbor . This conference was organized at the Liberty Science Center on September 9-10, 2009 in the State of New Jersey explore the water challenges facing coastal cities in the 21<sup>st</sup> century with the focus on the Netherland and the New York/New Jersey metropolitan region.
- Attended the Panel Discussion “Insure me: Climate Change, Human Migration and Risk” organized by the UNU Worldwide in New York on September 24<sup>th</sup>, 2009.

### Publications

- William Barclay Parsons Fellowship Monograph titled “ Ground Borne Vibrations in Urban Tunneling Projects -A Simple State-of-Art Design Guidelines”
- Coauthor with D. Donatelli, E. Wang and E. Dogan. “Cut and Cover Excavation Methodology for the No 7 Subway Line Extension Project”. North American Tunneling Conference “Extreme Tunneling: Improving Progress, Cost, Performance, and Safety” June 10-15, 2006, Chicago, Illinois.
- Coauthor with D. Anderson, A., N. Munfakh and S. Zlatanovic “Ground Borne Vibrations on the East Side Access Project’s Manhattan Segment: Issues and Impacts” Proceedings of the 31<sup>st</sup> ITA-AITES World Tunnel Congress “Underground Space Use-Analysis of the past and Lessons for the Future, pp 449-454, Istanbul Turkey, 2005.
- Coauthor with R. B. Roberts, E. C. Wang, M. Cianca, C. E. Osborne, C.C. Chang and A., Farajollahi. “Geotechnical Investigations and Rock Characterization for the New York City No 7 Subway line Extension Project.” A Specialty Seminar “Underground Construction in Urban Environments” Presented by ASCE Metropolitan Section Geotechnical Group and Geo-Institute of ASCE May 11<sup>th</sup> and 12<sup>th</sup>, 2005, New York City.
- Coauthor with R. Castelli and L. G. Silano, “Micropile Underpinning of the Atlantic Avenue Subway Station,” Proceedings of the 5<sup>th</sup> International Conference on Case Histories in Geotechnical Engineering, New York, April 2004 Paper No 11.06, Session No 11.
- Coauthor, “Analysis of Tunnel Section Enlargement through Cutting the Masonry Lining (Roches de Condrieu tunnel case on the Paris to Marseilles railway line),” Proceedings of the 5<sup>th</sup> International Conference on Case Histories in Geotechnical Engineering, New York, April 2004, Paper No 6.02, Session No 6.
- Coauthor with S. Sarkar and A. Mukherjee, “Rock Tunneling with TBMs on the East Side Access Project: A New Perspective,” Proceedings of the 5<sup>th</sup> International Conference on Case Histories in Geotechnical Engineering, New York, April 2004 Paper No 6.18, Session No 6.
- Coauthor with S. Sarkar, A. Mukherjee, and C. Stewart, “Geotechnical Investigation and Rock Characterization for the East Side Access Project Manhattan Segment,” Proceedings of the 5<sup>th</sup> International Conference on Case Histories in Geotechnical Engineering, New York, April 2004. Paper No 11.03, Session No 11.
- Coauthor with S. Sarkar, A. Benslimane, C. Stewart, C. Osborne, et al “Rock Mass Characterization for the Manhattan East Side Access Project,” Soil Rock America 2003 (the 12<sup>th</sup> Pan-American Conference for Soil Mechanics and Geotechnical Engineering and the 39<sup>th</sup> U.S. Rock Mechanics Symposium, June 22-25, 2003, Vol. 1, pp. 129-136.
- Coauthor with S. Hanna, et al, “Engineering Analysis of the Dynamic Behavior of Micropile Systems,” Proceedings of the Third International Workshop on Micropiles, Turku, Finland, June 4-7, 33 p, 2002.
- Coauthor with S. Hanna, et al, “Engineering Analysis of the Dynamic Behavior of Micropile Systems,” Journal of the Transportation Research Board, Transportation Research Record, paper No 01-2936, pp. 91-106. Presented at the TRB Annual Conference, Washington, DC, January 2001.

- “Seismic Behavior of Micropile Systems-Centrifugal Model Studies,” Ph.D. Dissertation submitted in partial fulfillment of the requirements for the degree of Doctor of Philosophy, Polytechnic University, New York, 2000.
- Coauthor, “Micropiles: the State of Practice. Part II: Design of Single Micropiles and Groups and Networks of Micropiles,” Journal of Ground Improvement, Thomas Telford Publisher, London, England, Volume 3, pp. 89-110, 1999.
- Coauthor with S. Hanna et al, “Seismic Behavior of Micropile Systems,” ASCE Special Publication No. 81, Boston, Massachusetts, pp. 239-258, October 1998.
- Coauthor with S. Hanna, et al, “Recent Developments in Soil Nailing: Design and Practice,” ASCE Special Publication No. 81, Boston, Massachusetts, pp. 259-284, October 1998.
- Coauthor with S. Hanna, et al,, “Seismic Retrofitting Using Micropile Systems—Centrifugal Model Studies,” Proceedings of the 4<sup>th</sup> International Conference on Case Histories in Geotechnical Engineering, St. Louis, Missouri, March 1998.
- Coauthor, “Group and Network Effect in Micropile Design Practice,” XIV International Conference on Soil Mechanics and Foundation Engineering, Volume 1, pp. 767-770, Hamburg, 1997.
- Coauthor, “Slope Stabilization by Micropile Ground Reinforcement,” presented at the International Symposium on Landslides, Trondheim, Norway, pp. 1715-1726, June 1996.