

RESUMÉ

1. NAME AND ADDRESS:

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2. EDUCATION:

Ph.D. University of Illinois, Urbana, IL, 1962
M.S. University of Illinois, Urbana, IL, 1961
P.G. Diploma, University of Roorkee, 1959
B.E. Civil Engineering, University of Roorkee, 1954

3. PROFESSIONAL APPOINTMENTS²:

Sep. 2000 - Present	Professor Emeritus, Missouri University of Science and Technology (MST)
Sep. 1980 - 2000	Professor of Civil Engineering, University of Missouri-Rolla (now MST)
Sep. 1978 - Aug. 1980	Associate Professor, University of Missouri-Rolla (now MST)
Aug. 1983 - June 1985	Director, Central Building Research Institute, Roorkee
Jan. 1982 - July 1983	Professor and Head, Civil Engineering Department University of Roorkee, Roorkee, India
Dec. 1966 - Sept. 1985	Professor, University of Roorkee, Roorkee, India
June 1962 - Dec. 1966	Reader University of Roorkee, India
Aug. 1959 - Jan. 1962	TCM Research Fellow Univ. of Illinois, Urbana IL
April 1957 - June 1962	Lecturer in Civil Engg. Roorkee University
June 1954 - March 1957	Assistant Engineer, Punjab PWD, India

4. PROFESSIONAL REGISTRATION:

1. Registered Professional Engineer, State of Missouri
2. Chartered Engineer (C. Engr.) UK and INDIA

¹ President, SP Foundation, Director, Mother's Mission, and YOGA-CHARYA

² Several multiple appointments

5. RESEARCH INTERESTS:

Non-linear Solutions in Geotechnical Earthquake Engineering and Predictions and Performance in Geotechnical Engineering including;

- a) Displacement Based Design of Retaining Walls under Earthquakes
- b) Liquefaction of Silts and Clays
- c) Dynamic Soil-Pile-Structure Interaction
- d) Abutments under Earthquake Loads
- e) Lateral Displacements of Piles Considering Non-Linear Soil Modulus

6. CAREER ACHIEVEMENTS:

A. OUTSTANDING RESEARCH ACHIEVEMENTS

1. Introduced “SOIL DYNAMICS” in India in 1962 and set-up the first “SOIL DYNAMICS” laboratory at the University of Roorkee, India (currently known as Indian Institute of Technology, Roorkee).
2. Introduced the first Graduate course in Soil Dynamics at Roorkee in 1962
3. Introduced research on liquefaction of soils, pile foundations under seismic loads, displacements of retaining walls under earthquakes, in-situ dynamic testing of soils, and design of machine foundations in Roorkee in 1960’s.
4. Introduced the concept of “*Displacement Based Design of Rigid Retaining Walls under Seismic Conditions*” in 1973 at Roorkee (Prakash and Nandkumaran, 1973) and is a recognized leader on the subject. His latest work (Wu and Prakash, 2001; Prakash, 2001; Munaf and Prakash, 2004; and Wu and Prakash, 2010) represent the state-of-the-art on this subject.
5. His research on displacement based design of retaining walls (Wu and Prakash, 2001) and liquefaction of sand with fines (Prakash and Puri, 2003, 2004) are still the state-of-the-art on the subject.
6. Developed rational procedure for advanced analysis and design of piles under seismic loading in 2008.

B. SPECIAL RECOGNITIONS AND HONORS

1. Admitted as a Diplomat of Geotechnical Engineering, Academy of Geo Professionals of the American Society of Civil Engineers, December 2010.
2. Recognized as a Distinguished Alumnus of the Indian Institute of Technology, Roorkee, in December 2008 and has been cited for his significant contributions to geotechnical earthquake engineering, prediction and performance in geotechnical engineering and is a recognized Yoga Guru.
3. Admitted as an Honorary Fellow of Indian Geotechnical Society, December 2006 and has been cited for leadership in Research and Practice of Geotechnical Earthquake Engineering in India and throughout the world.
4. He has been conferred the IGS – Kuckelman prize for 2004-2005 in December 2006. He has been cited for his leadership in Geotechnical Engineering in India and

- developing International Conference in Case Histories in Geotechnical Engineering (1984-2013) and Recent Advances in Geotechnical Earthquake Engineering and Soil Dynamics 1981-2010, which are unique in character and encourage young engineers and scientists by awarding the Research Awards and prize for Excellence in Practice.
5. Admitted to the Order of the Golden Shillelagh, by MSM-University of Missouri–Rolla, Alumni Association in June 2006.
 6. Recognized as Distinguished Alumni by Civil Engineer Department, University of Illinois (UIUC) in April 2004 for his contributions on liquefaction of sands-silt mixtures and displacements based design of retaining structures.
 7. Received Doctor, Honoris Causa by the Technical University of Civil Engineering Bucharest, Romania (April 2003). He has been cited for his pioneering Research on Liquefaction of Silts, Non-linear Analysis of Geotechnical Structures, Prediction and Performance in Geotechnical Engineering and development of important analytical techniques for the analysis and design of machine foundations and for outstanding friendship, and cooperation among nations, and a reliable friend of the Romanian people.
 8. Received Honorary Fellowship, of Indian Society of Earthquake Technology (December 2002) for his contributions in Geotechnical Earthquake Engineering and Soil Dynamics, his pioneering research on Liquefaction and Machine Foundation Analysis and Design at Roorkee, India in 1960s and his continued work when he moved to Missouri University of Science and Technology (formerly University of Missouri-Rolla), in 1978. Dr. Prakash is founding member of Indian Society of Earthquake Technology. He has been cited for his exemplary service to the worldwide community, in both Geotechnical Engineering and traditional yoga. He is a recognized Yoga Teacher and has lectured in Australia, Canada, India, Japan, Norway, Singapore, UK, USA, and many other countries. He is a *complete* Yoga teacher encompassing all aspects of human personality and is like a Guru in Vedic teaching. He has developed a unique program of inner peace and happiness based on Rishi Ptanjali’s Ashtang Yoga and has a (*signature*) workshop on Yoga Sadhana, Pranayam, and Meditation and offers free classes and lectures worldwide on meditation and peace of mind.
 9. Life Member of American Society of Civil Engineers for his continued support to the society.
 10. Member of a U.S. delegation to the U.S.-Taiwan workshop on Liquefaction, Taipei, November 2003.
 11. Appointed Emeritus Professor of Civil Engineering by the University of Missouri–Rolla for his meritorious service, September 2000.
 12. Recipient of the Federation of Indian Chamber of Commerce and Industry (FICCI) Research Award in 1985, for his valuable contribution to the field of Geotechnical Earthquake Engineering, including Soil Dynamics and Low Cost Housing. His research on behavior of piles groups under lateral loads was the first work in the area which culminated in quantitative evaluation of the effect of group action on load carrying capacity of piles extensively used under retaining structures, offshore foundation and multi-storied buildings. His studies on dynamic properties of Indian soil deposits and their liquefaction characteristics and behavior of pile foundation, analysis and design of earthquake resistant retaining walls have been widely acknowledged.

13. Received the Jai Krishna Prize of Institution of Engineers for his paper on “Liquefaction Analysis of Soils” and “Best Paper Award of the Indian Geotechnical Society in 1984.
14. Developed alternate materials from agricultural waste like rice husk and from industrial wastes like flyash and magnesium oxychlorides, etc. The low cost housing techniques such as stone block masonry, low cost latrines, fire-proof thatch roofs are being progressively adopted in several States, including U. P. Andhra Pradesh, Rajasthan, Imphal, etc.
15. Has been invited to International Conferences on Soil Mechanics and Foundation Engineering of the International Society of Soil Mechanics and Foundation Engineering as:
 - (a) Panelist on Deep Foundations, 16th ICSMGE, Osaka, September 2005.
 - (b) Chairman, Session on Liquefaction 13th Int’l. Conf., New Delhi, Jan 1994.
 - (c) Co-General Reporter, "Pile Foundations", 12th Int’l. Conf., Rio, Brazil, 1989.
 - (d) Disc. Leader Ses. 7B, 11th Int’l. Conf. on SM&FE, San Francisco, 1985.
 - (e) Panel Reporter, 10th Int’l Conf. on SM&FE, Stockholm, 1981.
 - (f) Co-reporter Soil Dynamics, 9th Int’l Conf. on SM&FE, Tokyo, 1977.
 - (g) Chairman – Spec. Sess. on Soil Dynamics - 8th Int’l. Conf., Moscow, 1973.
16. Has been invited as Keynote and State of the Art Speaker at several International and National Conferences:
 - (a) Past and Future of Liquefaction of Soil, Indian Geotechnical Conference, Bombay, December 2010.
 - (b) Performance Based Design of Rigid Retaining Walls, University of Houston, Texas, February 2009, University of Canterbury, New Zealand and New Zealand Society of Geotechnical Engg and Earthquake Engg, Wellington, New Zealand, November 2009, and University of Wollongong, Australia, December 2009
 - (c) Liquefaction of Soils, Lanzhou Institute of Seismology, China, October 2008
 - (d) Piles Foundations under Earthquakes, Hangzhou University, Hangzhou and Zhejiang University, Shanghai, China, October 2008, Special lecture to Met. Section ASCE NY, April 2007
 - (e) Keynote Lecturer, IGC - 2006 Madras, December 2006
 - (f) Keynote to Geo - Singapore, December 2006
 - (g) Keynote Lecturer, IGC – 2005, Ahmedabad, December 2005
 - (h) Invited Speaker to Workshop on Geotechnical Earthquake Engineering, Tirana, (Albania), September 2004
 - (i) Invited Speaker on Liquefaction of Silts, US-Taiwan Workshop, Taipei, Nov. 2003
 - (j) Keynote Speaker – “Geotechnical Earthquake Engineering and Infrastructure Development” – IGC 2003, Roorkee
 - (k) Keynote Speaker – “Stability of Retaining Structures” –IGC 2001, Indore
 - (l) Keynote Speaker – “Teaching of Geotechnical Engineering” –IGC2000, Allahabad
 - (m) State of the Art - Recent Advances in Soil Dyn., XI Asian Reg. Conf. SM FE, August 1999
 - (n) State of the Art - Recent Advances in Geot. Eq. Engg, XI Danube European Conf. on SM&FE (Croatia), May 1998
 - (o) ASCE/PA DOT Harrisburg, PA, Invited Lecturer, 1998

- (p) Int'l Workshop on Soil Dynamics Lisbon (Portugal), 1992 Invited State of the Art Speaker
- (q) Indian Society of Earthquake Technology - Annual Lecture, January 1988
- (r) Indian Geotechnical Society - Annual Lecturer 1983
- (s) Member – Phi Kappa Phi

C. SPECIAL SERVICE TO PROFESSION

1. Has chaired five International Conferences on Recent Advances in Geotechnical Earthquake Engineering and Soil Dynamics, Missouri University of Science and Technology, First 1981, St. Louis, Missouri, Second 1991, St. Louis, Missouri, Third 1995 St. Louis, Missouri, Fourth 2001 San Diego CA, and Fifth 2010 in San Diego CA.. He started this series of conferences at Missouri S&T, when this subject was in infancy worldwide and he has been commended for this initiative by all the senior professionals around the world.
2. Chaired six International Conferences on Case Histories in Geotechnical Engineering in 1984, 1988, 1993, in 1998 St. Louis, Missouri, New York, NY in 2004, and Arlington, Virginia in 2008. He has been appointed Chairman, Conference on Legacy of Prof. Ralph B. Peck, and Seventh International Conference and Case Histories in Geotechnical Engineering, Chicago IL, May 2013.

These conferences have had participation from 30-40 countries, with about 50% participants from overseas. (see Table below). This is a unique service to the profession.

3. He organized several short courses for Professional Engineers in Roorkee as well as Rolla, Missouri:
 - (a) Short course on Soil Dynamics in Engineering Practice 2001 (San Diego, CA), 2004 (New York, NY), 2008 (Arlington, VA) and 2010 (San Diego, CA)
 - (b) Short course on Dynamic Soil Structure Interaction 1994, 1995, 1996, 1997
 - (c) Short course on Foundation Engineering and Soil Dynamics 1979, 1985, 1986, 1987, 1988
 - (d) Short course on Machine Foundation UMR 1979, 1980, 1989, 1990, 1991
 - (e) UNESCO Short Course on Machine Foundation, Roorkee 1975, 1976
4. (a) President, Indian Geotechnical Society, 1971-73, 1973-75
 (b) Chairman, National Committee on Science and Technology, Govt. of India, to draft recommendations on "Foundation Design and Construction", 1974
5. President, Indian Society of Earthquake Technology, 1983-85

Table 1. International Participation in Geotechnical Engineering Conferences Organized by Missouri University of Science and Technology (formerly University of Missouri–Rolla)

CONFERENCES	TOTAL PARTICIPANTS	TOTAL COUNTRIES	FOREIGN PARTICIPATION	
			TOTAL PARTICIPANTS	PERCENT
(First) International Soil Dynamics 1981	304	24	125	41%
(First) International Case Histories 1984	189	29	81	43%
(Second) International Case Histories 1988	250	23	93	37%
(Second) International Soil Dynamics 1991	320	34	134	42%
(Third) International Case Histories 1993	232	34	94	41%
(Third) International Soil Dynamics 1995	220	32	102	46%
(Fourth) International Case Histories 1998	165	32	65	39%
(Fourth) Intern. Soil Dynamics 2001	338	33	191	57%
(Fifth) International Case Histories 2004	328	37	154	47%
(Sixth) International Case Histories 2008	318	43	158	50%
(Fifth) International Soil Dynamics, 2010	377	41	177	47%

7. ADMINISTRATIVE EXPERIENCE

- (a) Chairman, Civil Engg. Dept., Univ. of Roorkee, (now Indian Institute of Technology, Roorkee), (1/1982-8/1983) 72 Faculty in seven specialty areas e.g. Geot., Hyd, Str, Remote Sensing, Env., Transp., and Building Science. 240 U.G. students, 120 MS and 80 Ph.D. I was responsible for updating the U.G. curriculum.
- (b) Director, Central Building Research Institute, Roorkee (8/1983-6/1985) 200 Scientists and 500 supporting staff: R&D in Soils, Foundations, Building materials. Prefab constructions, appropriate building technologies, Energy efficient buildings, low cost housing and others.

8. SUPERVISED RESEARCH

(a) Ph.D. DISSERTATIONS SUPERVISED: 10 in the USA and 14 in INDIA

IN USA

1. Design of Rigid Retaining Walls by Eurocode, 1999
2. Bridge Abutment-Soil-Pile Interactions, 1999
3. Dynamic Soil-Pile-Structure Interactions, 1996
4. Embedded Foundation under Dynamic Loads, 1995
5. Analysis of Pile Groups Under Earthquakes, 1993
6. Displacements of Embankments Under Earthquakes, 1992
7. Displacements Based Design of Retaining Walls Against Earthquakes, 1991
8. Vibrating Footings Analysis Considering Soil Non-linearity, 1990
9. Dynamic Characteristics of Loessial Soils, 1989
10. Liquefaction of Loessial Soils and Silts, 1984

IN INDIA

11. Effect of Vibrations on Skin Friction of Piles, 1986
12. Strength of Boulder Materials, 1984
13. Footing Structure Interaction Considering Soil Non-Linearity, 1984
14. Battered piles under Lateral Loads, 1984
15. Prediction of Time Dependent Displacements in Piles, 1981
16. Non-Linear Analysis of High Rockfill Dams, 1977
17. Pressure Settlement of Footings from Constitutive Laws, 1977
18. Behaviour of Buried Conduits, 1976
19. Liquefaction of Sands under Earthquakes, 1976
20. Well Foundations under Static and Dynamic Lateral Loads, 1975
21. Static and Dynamic Bearing Capacity of Soils, 1975
22. Behaviour of Piles under Earthquake Loading, 1974
23. Behavior of Retaining Walls under Earthquakes, 1974
24. Bearing Capacity of Footings Subjected to Moments, 1969

(b) M.S. THESES SUPERVISED: 10 in the USA and 30 in INDIA

9. AFFILIATIONS WITH PROFESSIONAL ORGANIZATIONS:

Membership Technical Committees:

1. Member TC-4, Technical Committee on Soil Dynamics (1988-2004), ISSMGE
2. Co-chair- Geot. Comm. Inter. Soc. of Offshore and Polar Engg. 1992-1996
3. Member - Editorial Board International J. for Numerical Methods in Geomechanics, 1976 to 1990
4. Member - Soil Dynamics Committee, ASCE 1980-1984; 1989 to 2003
5. Member - Control Group Soil Dyn. Committee 1992 to 2002
6. Member - D-18 Soil & Rock Mechanics Committee ASTM, 1980 to 2000
7. Member - ACI Committee 351-Found. for Equip. Machine. 1981 to 2002
8. Member - Editorial Board, International Journal of Soil Dynamics and Earthquake Engineering, 1982 to 2000
9. Co-chair- Geot. Comm. Inter. Soc. of Off shore and Polar Engg. 1992-1996
10. Member - Editorial Board International J. for Numerical Methods in Geomechanics, 1976 to 1990

Memberships:

11. Honorary Member - Indian Society Earthquake Technology
12. Honorary Member - Indian Geotechnical Society
13. Life Fellow - American Society of Civil Engineers
14. Fellow - Institution of Engineers (India)
15. Fellow - Institute of Civil Engineers (London)
16. Member – International Society of Soil mechanics and Foundation Engineering
17. Member - Earthquake Engineering Research Institute
18. Member – Canadian Geotechnical Society

10. PRESENTATIONS AT NATIONAL AND INTERNATIONAL CONFERENCES:

Lecture	Place
<u>2010</u>	
Past and Future of Liquefaction Developments in Liquefaction Analysis from Observations During Earthquake	IGC-2010 Bombay IGC-Forensic Conference, Bombay, 2010
<u>2009</u>	
Performance Based Design of Rigid Retaining Walls	University of Houston, February 2009 University of Canterbury, New Zealand and New Zealand Society of Geotechnical Engineering and Earthquake Engineering, Wellington, New Zealand, November 2009 University of Wollongong, Australia, December 2009
<u>2008</u>	
Liquefaction of Soils Pile Foundations	Lanzhou Institute of Seismology, China, October 2008 Hangzhou University and Zhejiang University, Shanghai, China, October 2008 St. Louis Section ASCE, St. Louis, MO, October 2008
How to be a Successful Engineer	BBSB Engineering College, Fatehgarh Sahib, India, December 2008
<u>2007</u>	
Retaining Structures Under Earthquake Invited Lecture on Piles	MET Section.ASCE, New York, NY, April 2007
Recent Advances on Soil Dynamics Aseismic Design of Rigid Retaining Walls	UTCB, Bucharest, Romania, March 2007 National Academy of Science, Bulgaria, March 2007 Greek Society of SM&FE, Athens, and University of Patras, March 2007
<u>2006</u>	
Keynote - Piles Under Earthquakes Keynote – Recent Advances on Soil Dynamics	GEO- Singapore, Dec. 2006 IIT Roorkee – Nov. 2006 IGC Madras – Dec. 2006
<u>2005</u>	
Deep Foundations During Earthquakes Damage to Civil Engs. Structures during Earthquakes	IGC – Ahmedabad, December 2005 Punjab Engineering College, Chandigarh (UT) and TIET, Patiala, (Pb)
How to be a Successful Engineer	Punjab Engineering College, Chandigarh (UT) and TIET, Patiala (Pb)

2004	A Seismic Stability of 2 Bridge Foundations	IIT, Delhi, and Albanian Geotech Society Tirana
	Retaining Walls under Earthquakes How to be a Successful Engineer	IIT Roorkee, Albanian Geotech Society and II Sc, Bangalore MA-NIT, Bhopal
2003	Stability of Abutments of Bridges in Missouri	Pacific Earthquake Engineering Conference, Canterbury, New Zealand
2002	Health Monitoring of Typical Geotechnical Transportation Structures	12th Europe Conference Earthquake Engineering, London
2001	Health Monitoring Typical Geotechnical Transportation Structures	IGC Indore (India)
2000	Retaining Walls Under Earthquakes	12 WCEE Auckland, (NZ)
1999	Theme Lec. - Recent Advances in Soil Dynamics	XI Asian Reg. Conf. SM FE, SEOUL
1998	Recent Advances in Geot. Eq. Engg. Insitu Liquefaction Resistance of Sands	XI Danube European Conf. On SM&FE Intern. Workshop, Liquefaction, Baltimore MD
1997	Retaining Structures Under Earthquakes On Natural Frequencies of Structures Displacements of Rigid Walls Dynamic Soil Pile Interaction	ASCE Penn DOT Conf Harrisburg, PA ASCE Sp Session Minneapolis, MN Sinotech Taiwan, Tainan University
1996	Realistic Displacements of Rigid Retaining Walls Dynamic Soil-Pile Interactions Retaining Walls in Recent Earthquakes Dynamic Pile-Soil-Pile Interactions	ASCE Sp. Session Washington DC ISOPE 96 - Los Angeles 11 WCEE – Acapulco 11 WCEE – Acapulco
1995	Recent Advances in Soil Dynamics Liquefaction of Soils Geotechnical Earthquake Engineering Research at UMR Liquefaction of Silts and Silt Clay Mixtures	IGC-95 – Bangalore Univ. of Iceland, Reykjavik Univ. of Roorkee, Roorkee, India International Conference of ISOPE-95, the Hague, Netherlands, June 1995
1994	Recent Analysis of Vibrations in Soils	Cent. Florida ASCE, Orlando, March 1994
1993	Soil Dynamics in Marine Environment	3rd Intern. Conf. of ISOPE, Singapore, June 1993

1992 Piles under Marine Conditions	2nd Intern. Conf. of ISOPE, San Francisco, June 1992
1991 Recent Advances in Geot. Eq. Engineering Prediction and Performance in Geotechnical Engineering Geotechnical Engineering on the threshold of 21st Century Damage to Civil Engineering Structures in Recent Earthquakes Analysis and Design of Pile Foundations Analysis and Design of Machine Foundations	IX Asian Reg. Conf. SMFE Bangkok, December 1991 Institution of Engineers (Kenya) Univ. of Nairobi-Kenya, Dept. of Civil Engineering, July 1991 Univ. of Nairobi-Kenya, Dept. of Civil Engg, July 1991 Univ. of Nairobi-Kenya, Dept. of Civil Engg, July 1991 Univ. of Nairobi-Kenya, Dept. of Civil Engg, July 1991 Univ. of Nairobi-Kenya, Dept. of Civil Engg, July 1991
1990 Role of Model Tests in Geot. Eq. Engr. Soil Dynamics and Marine Foundations Geotechnical Engineering on the Threshold of the 21st Century Pile Foundations Under Dynamic Conditions Predictions and Performance in Geotechnical Engineering Displacements of Embankments under Static and Dynamic Loads	9th Symp. Eq. Engg. Roorkee, Dec. 1990 Nihon University, Tokyo (Japan) and "Institute of Soil and Snow Mechanics," Niigata (Japan), June 1990 IGC-90, Bombay, Dec. 1990 a) Public Works Res. Inst., Tsuba City, (Japan) June 1990 b) Society of Soil Mechanics and Foundation Engineering and Kyushu University, Fukuoka, (Japan) June 1990 Conference on Earthquake Engineering, Palm Springs, CA, May 1990
1989 Soil Mechanics on the Threshold of 21st Century	Indian Geotechnical Conference 1989, Vishakapatnam
1988 Relevance of Displacements in Geotechnical Structures Recent Development in Geotechnical Engineering Predictions and Performance of Piles Pile Foundation Under Dynamic Loads	Theme lecture to Indian Geotechnical Conference, Allahabad, December 1988 Lecture to Institution of Engineer, Roorkee (UP), December 1988 Int. Conf. on Case Histories in Geot. Engr., St. Louis, MO, June 1988 ISET Annual Lecture, Roorkee, January 1988
1987 Risk Analysis of Liquefaction of a Compressor Foundation	Third Intern. Conf. on Soil Dynamics, Princeton, May 1987
Before 1987 Future Trends on Geotechnical Earthquake Engineering Research Rigid and Flexible Retaining Structures Under Dynamic Loads Past and Future of Geotechnical Earthquake Engineering Rigid Retaining Walls Under Earthquakes - State-of-the-Art Future Problems of Geotechnical Earthquake Engineering	Eighth Symposium on Earthquake Engineering, Roorkee, December 1986 International Symposium on Engineering Geology Problems in Seismic Areas, Bari (Italy), April 1986 IGS Annual Lecture, Madras (India), December 1983 International Conference on Recent Advances in Geotechnical Earthquake Engineering and Soil Dynamics, St. Louis, Missouri, April 1981 International Convention of American Society of Civil Engineers, May 1981

Analysis and Design of Pile Foundations Under Earthquake Loads	<ul style="list-style-type: none"> a) Netherlands Society of Soil Mechanics and Delft Laboratories, Delft (Netherlands), September 1980 b) Japan Steel Pipe Pile Association, Tokyo, July 1979 c) General Services Administration, US Government, Washington, D.C., March 1984 d) Washington University, St. Louis, MO, Spring 1980 e) University of Wales, Swansea (UK), June 1980 f) Building Research Station, Watford (UK), June 1980 g) University of Manchester, Manchester (UK), June 1980 h) Ecole Polytechnique Federals de Lausanne, (Switzerland), June 1980 i) Northwestern University, Illinois, November 1978 j) Univ. of New South Wales, Kingston NSW, Australia, August 1977 k) Sydney University, Sydney NSW, Australia, August 1977 l) University of Hiroshima, Hiroshima (Japan), August 1977 m) University of Illinois, Urbana, Illinois, July 1976 n) California Institute of Technology, Pasadena, California, July 1976 o) University of California, Berkeley, California, July 1976 p) University of Western Australia, Perth, July 1975 q) University of Melbourne, Australia, August 1975 r) University of Singapore, Singapore, August 1975
Behavior of Footings Under Dynamic Loads	Conf. on Recent Advances in Behavior of Soil, Sydney, Australia, 1975
Behavior of Soils Under Repetitive Loads	Conference on Behavior of Soils Under Repetitive Loads, School of Transportation Engineering, Univ. of NSW, Sydney, Australia, 1975
Past and Future of Geotechnical Earthquake Engineering	<ul style="list-style-type: none"> a) New York Polytechnic Institute, Brooklyn, New York, Nov. 1985 b) National Bureau of Standards, Washington, D.C., March 1984
Liquefaction of Soils	<ul style="list-style-type: none"> a) General Services Administration, US Government, Washington, D.C., March 1984 b) Washington University, St. Louis, Missouri, Spring 1980 c) Ecole Polytechnique Federals de Lusanne, (Switzerland), June 1980 d) University of Illinois, Chicago, Illinois, December 1979 e) Detroit Institute of Technology, Detroit, Michigan, July 1976 f) Monash University, Melbourne (Australia), August 1975 g) Ohio State University, Columbus, Ohio, July 1976
Retaining Walls Under Earthquakes	<ul style="list-style-type: none"> a) Laboratorie Central Des Ponts et Chaussiss, Paris (France), June 1980 b) Virginia Polytechnic Institute and State University, Blacksburg, Virginia, November 1979 c) California State University, Long Beach, California, August 1979 d) University of British Columbia, Vancouver, B.C., October 1979 e) Purdue University, West Lafayette, Indiana f) Kyushu University, Fukuoka, (Japan), August 1977 g) University of California, Berkeley, California, July 1976 h) University of California, Sacramento, California, July 1976 i) University of Southern Australia, Adelaide (Australia), July 1975 j) Chulalongkorn University, Bangkok (Thailand), August 1975 k) Indian Institute of Technology, New Delhi, June 1979
Low Cost Housing	<ul style="list-style-type: none"> a) Osmania University, Hyderabad, June 1982 b) Institution of Engineers, Shimla, March 1985 c) Symposium on Building Materials, Bhopal, March 1985
Analysis and Design of Machine Foundations	<ul style="list-style-type: none"> a) Kings College, London (UK), June 1980 b) Univ. of Wollongong, Wollongong NSW, Australia, August 1977 c) University of Missouri-Rolla, Rolla, Missouri, July 1976 d) Jadavpur University, Jadavpur (India), August 1973 e) Mara Institute of Technology, July 1985 Mara (Malaysia)

11. CONSULTING EXPERIENCE:

1. Design of Machine Foundations
2. Design of Hammer Foundations
3. Compaction of Silty Soils
4. Design of Machine Foundation for 10 T Drill
5. Dynamic Pile Tests for Paper Mill Foundations, Review of Test Program, Finland
6. Effect of Blasting Vibrations on Residential Buildings, Detroit (Mich)
7. Liquefaction of Soils Below BRPL Compressor
8. Stability of Compressor Foundations, Bongaigaon Refinery
9. Dynamic Soil Pile Constants for MRPL
10. Stability of 6-story public building on hill slope
11. Liquefaction of foundation soils at 3 dam sites and one barrage site
12. Settlement of 108' Hindu-Church
13. Foundations for Thermal Plant, Bhatinda
14. Pile Foundations for Haldia Refinery

12. WHO'S WHO LISTING:

1. Who's Who in Frontiers of Science and Technology/Marquis Who's Who - Chicago IL
2. Who's Who in the Midwest, Chicago IL
3. Who's Who in Technology, Pittsburg PA
4. American Men and Women of Science
5. Who's Who - Indian Personages, New Delhi
6. Who's Who in India, Bombay, 1986

13. SIGNIFICANT TECHNICAL CONTRIBUTIONS

1. PREDICTION AND PERFORMANCE IN GEOTECHNICAL ENGINEERING

Analysis and design of geotechnical structures is based upon several simplifying assumptions on soil behavior and it is, therefore, necessary that performance be checked with the predictions. A systematic program has been started for 8-years on performance of (1) Pile Foundations (2) Rigid retaining walls (3) Liquefaction and (4) Vibratory Footings.

2. ANALYSIS AND DESIGN OF RETAINING WALLS UNDER EARTHQUAKE CONDITIONS

Based on analysis of the behavior of retaining walls under earthquakes and laboratory studies, a design procedure which considers both the traditional criteria as well as the displacements of retaining walls during earthquakes was developed in 1974. More recently (1995) a design method has been developed based upon permissible displacements, soil non-linearity and sinusoidal ground motion. This is very comprehensive yet simple method of design of such structures. A monograph for design by the field engineer has been published. A computer Code for Design of Retaining Walls based on displacements and for real ground motion has been perfected, considering several water conditions behind the wall and a method for design of walls according to Eurocode has been developed (1999).

3. BEHAVIOR OF PILE FOUNDATIONS UNDER EARTHQUAKE CONDITIONS

Studies were initiated on behavior of piles under dynamic loads both in the laboratory as well as in the field. A design method developed in 1980 facilitated the design of piles for static and dynamic loads. This design procedure has since been published in technical journals as well as in the textbooks. Although this work was done in 1978, it continues to be valid even today. A company in Chicago has used this procedure for design of 2000 piles for their atomic power plant. A new method was later developed (1993) considering soil non-linearly. A computer code has been developed for analysis of piles under earthquake loads, considering super-structure interaction.

4. ANALYSIS AND DESIGN OF VIBRATORY FOOTINGS CONSIDERING SOIL NON-LINEARITY

A computer program has been developed for design of vibrating footings under vertical, torsional, sliding and rocking vibrations. The behavior of up to 16' diameter footings was predicted which compared very well with the full scale tests. The design procedure has been extended to cover embedded machine foundations, considering soil non-linearity and frequency dependent stiffness and radiation damping. A unique correction to radiation damping has been applied in vertical vibrations to match the computed and measured amplitudes at resonance.

5. LIQUEFACTION OF SANDS AND SILTS

Liquefaction resistance of sands is increased due to soil fabric, aging, cementation and previous strain history. These effects cannot be studied in Laboratory. Field data of about 70 sites has been analyzed and field resistance compared with laboratory resistance. A good correlation has been established with corrected $SPT(N_{160})$. Also a unique correlation has been developed between Plasticity Index and liquefaction resistance of silts. It has been found that both for undisturbed and reconstituted samples of silts, there is a critical value of P.I. at which the liquefaction resistance is the minimum.

6. PILES UNDER LATERAL LOADS

A simple but realistic method of lateral load deflection prediction of pile group has been developed in sands. Further studies are carried out on Pile groups in clay.

14. CIVIC ACTIVITIES AND PHILANTHROPIC ENDEAVORS

He established the Shamsheer Prakash Foundation in 1988 for uplift of mankind through their program in Yoga, Geotechnical Engineering, Education, and Peace.

(a) SP RESEARCH AWARDS AND PRIZES

(1) Shamsheer Prakash Research Award in Geotechnical Engineering:

This award (US \$1,100 cash and a plaque) has been made annually since 1990 and award winners include professionals from Canada, Czech Republic, France, Greece, India, Italy, Japan, Spain, Thailand, United Kingdom, and USA.

The following are recipients of the awards so far:

David Masin (Czech Republic) 2010	Jonathan D. Bray (USA) 1999
Jean Francois Semblat (France) Tara Hutchinson (USA) L.H.J. Gorzic (Canada) 2009	Ikuo Towhata (Japan) 1998
Itai Einav (Australia) 2008	Raymond B. Seed (USA) 1997
Ellen Rathje (USA) Tarek Abdoun (USA) 2007	Raj Siddharthan (USA) 1997
Jonathan Stewart (USA) Mitsu Okamura (Japan) 2006	Ahmed Elgamal (USA) 1996
Rodrigo Salgado (USA) Gopal Madabhushi (UK) 2005	Panos Dakoulas (USA) 1995
Juan M. Pestana(USA) 2004	M Pastor (Spain) Susumu Iai (Japan) 1994
D.N. Singh (India) Hao-Sui Yu (UK) 2003	D.T Bergado (Thailand) Shoba K. Bathia (USA) 1993
George Mylonakis (USA) 2002	R. Kerry Rowe (Canada) 1992
Ross W. Boulanger (USA) 2001	George Gazetas (Greece) 1990
Roberto Paolucci (Italy) 2000	

(2) Shamsher Prakash Prize for Excellence in the Practice of Geotechnical Engineering

This prize (US \$1100 cash and a plaque) has been instituted on the Tenth anniversary of the Shamsher Prakash Foundation and is awarded annually. The winners include professionals from Australia, Israel, Korea, United Kingdom, and USA.

The following are recipients of the prizes so far:

Arul Arulrajah (Australia), 2010	Jesus Gomez (USA), 2004
Allen William Cadden (USA) Zygmunt Lubkowski (UK), 2009	Sissy Nikolaou (USA) Yossef H. Hatzor (Israel), 2003
Sanjeev Kumar (USA), 2008	Neven Matasovic (USA), 2001
Mounir Bouassida (Tunisia), 2006	Scott Steedman (UK), 1999
Hyu Shin – Korea, 2005	

(3) Shamsher Prakash Research prize in Geotechnical Engineering for professionals from India

The prize is administered through Indian Institute Technology, Roorkee. It consists of a cash prize (INR 50,000) and a citation. This prize has been awarded two times so far.

B.K. Maheshwari (IITR), 2009
Deepankan Chowdhury (IITB), 2008

(4) Shamsher Prakash Award for Significant Achievement in Soil Dynamics

\$1,250, through Indian Society of Earthquake Technology

Prof. W.D. L. Finn (Canada), 2010

(5) Srimati Shalini prize for Creative Design

The prize was instituted in India in 2005 for undergraduate students of any discipline. The first prize is INR 20,000.

The following are recipients of the prizes so far:

NAMES	TITLE OF PROJECT	PRIZE
PRIZES-2010		
Anuvrat Chaturvedi Sourabh Mukherjee MANIT Bhopal	Virtual Reality Technology	First
Pulkit Gupta Souvik Roy Marut Shukla	Swarm Robots for Autonomous Thrash and Garbage Removal	Second
PRIZES-2009		
Ritika Sehgal	Fashion Retail House	First
Ipsheeta Arunai	Real Time Intelligent Lift System	Second
PRIZES-2008		
Arun Sharma Ankur Mundra Pooja Tripathi	New Technique For Discharge Measurement In Open Channels	First
PRIZES-2007		
B. Nishita Reddy Purna Aggarwal	An Economical Mobility Device for Rural Terrain	First
Ravi Tiwari Jatin Mitra Vaibhav Jain	Waterborne Boat with Robotic Arm for Seaweed Removal and Collection	First
Harish Kumar Jain Kushagra Mittal	International Airport Design at Visakhapattanam	Second

(6) Shamsheer and Sally Prakash Scholarship

For Undergraduate Civil Engineering students at Missouri University of Science and Technology, \$500, since 2006

(7) Shamsheer and Sally Prakash Prize for Creative Design in Civil Engineering

Missouri University of Science and Technology, \$500, Since 2007

(8) Primary School for Children of Migrant Labor

Shamsheer Prakash Foundation has established a primary school for children of migrant labor in Khet Pralli, India in 2001. There are 50+ students. All their expenses of education and two uniforms a year are paid by the Foundation.

(9) Adopted a Girls Only School

Shamsheer Prakash Foundation has adopted a Girls School in Sirhind (PB) for complete support to need-based and performance-based students in VI-X classes.

(b) PROFICIENCY IN TEACHING OF YOGA

1. Signature workshop on Yoga A to Z.
2. Yoga for prevention and healing of common colds, hypertension, stiffness of joints.
3. Yoga hydro-therapy, ancient cleansing exercise (*neti, kunjla, stomach wash*) for healing of Sinus, Allergies and Head Aches.
4. Pranayam and Meditation freedom from stress and effortless achievement; freedom from fear, thought process, end of sorrow, understanding of self (conscious and subconscious).

(c) CLASSES AND TALKS:

1. Yoga classes on Meditation, Pranayam at Senior Center, Rolla, Missouri 2008, 2009 and 2010.
2. Yoga for Seniors, Senior Center, Rolla, Missouri 2007.
3. Peace of Mind through Yoga – Sadhana, Washington, D.C. 2006, IITR, Nov. 2006 , Houston, Texas, Aug 2007; “Yoga Workshop”, Purdue University, Feb 2004, UMR Feb 2004.
4. Yoga and Meditation for Peace of Mind, India Medical Association, Indore, March 2003.
5. Yoga Classes in Rolla, Missouri, 1979-2003.
6. Yoga Classes in Newburg, Missouri, 1991-1993 and 2000.
7. Yoga Classes for Faculty Wives Club, University of Missouri-Rolla, fall 1986, 1990, and 2010.
8. Workshop on Yoga Cleansing & Meditation, Roorkee, 1982, 1983, 1998, 1999, 2000 and 2001 Rolla, Missouri 1981, 1982, 1987.
9. Lectures on “Yoga in Everyday Life for Householder”, Stockholm (Sweden) and Oslo (Norway) June 1981.
10. Talk to India Association, Swansea (UK), May, 1980.
11. Talk on “Yoga” to University of Missouri-Rolla “Time of Your Life”.
12. TV Program on Pan American Channel 5 – on “Yoga for Health” in Lima, Peru, December 6, 1979.
13. Lecture on “A Scientist’s Approach to Yoga”—Institute of Asian Studies, University of British Columbia, Vancouver, BC, Canada, 21 October, 1979.
14. Lecture on “Yoga in Your Life”, Tokyo, Japan, August 1979.
15. Lecture on “Yoga to Ladies Executive”, Tokyo, Japan, August 1979 on “Yoga in USA”, Roorkee, India, July 1979. Talk to Australian Broadcasting Commission, Sydney, Australia, 1975 and Int’l Yoga Assoc. of Australia, Sydney and Brisbane 1975. Talk to All India Radio, New Delhi, 1978 and to several Universities in India, 1977, 1978. Talk to Rotary Clubs in India, 1978, 1979, 1983.
16. Classes on Yoga in Singapore, July 1979, “Yoga for Health” to John Knox Village, September and November, 1979.
17. He was felicitated at the International Conference on Yoga Therapies, Lucknow, India, November 30, 2005 for his service to the communities worldwide for free Yoga Workshops and free literature.

(d) BOOKS ON YOGA

- (i) Everyday Pranayam for Everybody, SP Foundation 2005 by Shamsheer Prakash (This text can be downloaded from website www.yoga10.org)
- (ii) Introduction to Prevention and Yoga, SP Foundation 1995

15. BOOKS:

Books Published in USA

1. "Soil Dynamics" (Second Edition) by Shamsheer Prakash and V.K.Puri, in prep.
2. "Displacement Based Aseismic Design Charts for Rigid Retaining Walls". Shamsheer Prakash, Alex Wu and E.A. Rafnsson, S.P. Foundation, Rolla, Missouri, June 1995
3. "Fundamentals of Soil Mechanics" by Shamsheer Prakash, S.P. Foundation, Rolla, Missouri, Jan. 1995
4. "Pile Foundations in Engineering Practice," by Shamsheer Prakash, Hari D. Sharma; John Wiley and Sons, New York, 1990.
5. "Foundations for Machines, Analysis, and Design," by Shamsheer Prakash, V.K. Puri; John Wiley, New York, 1988.
6. "Soil Dynamics," by Shamsheer Prakash, McGraw-Hill Book Co., New York, N.Y. April 1981, Reprinted, S.P. Foundation, Rolla, Missouri 1991.

Edited Books and Proceedings USA

7. Proc. Fifth International Conference on Recent Advances in Geotechnical Earthquake Engg and Soil Dynamics, San Diego, CA May 2010 CD-ROM
8. Proc. Sixth International Conference on Case Histories in Geot. Engg., Arlington, VA August 2008 CD-ROM
9. Proc. Fifth International Conference on Case Histories in Geot. Engg., New York, NY April 2004 CD-ROM
10. Proc. Fourth International Conf. On Recent Advances in Geot. Engg., Soil Dynamics San Diego CD-ROM March 2001
11. Proc. Fourth Intern. Conf on Case Histories in Geot Engg 1998 UMR (CD-ROM).
12. Seismic Analysis and Design for soil Pile-Structure Interaction, 1997 ASCE, Spec. Geot. Publication 70.
13. Analysis and Design of Retaining Structures Against Earthquakes, 1996 ASCE Geot. Spec. Pub. No 60.
14. Ground Failure under Earthquakes, ASCE Geot. Engg. Series No 44 October 1994 Co-Editor, Panos Dakoulas.
15. Piles under Dynamic Loads, ASCE Geot Engg Series 34, Sept. 1992.
- 16-17. Proc 3rd Int'l Conf on Geo Earthquake Engg, 1995, 2nd 1991 and 1st 1981.
- 18-20. Proc Third International Conf on Case Histories 1993, 2nd 1988, 1st 1984.

Published in INDIA

21. "Soil Dynamics" (Translated into Chinese and published in China, 1985).
22. "Analysis and Design of Foundations and Retaining Structures," by Shamsheer Prakash, Gopal Ranjan and Swami Saran; Sarita Publishers, Meerut, Dec. 1979.

23. "*Laboratory Geotechnical Testing*," by Shamsheer Prakash and P.K. Jain; Nemchand and Bros., Roorkee, U.P., 1978.
24. "*Problems in Soil Engineering*," by Shamsheer Prakash and Gopal Ranjan; Sarita Prakashan Publishers, Meerut, U.P., 1976.
25. "*Soil Mechanics and Foundation*," by Bharat Singh and Shamsheer Prakash; Nemchand and Bros., Roorkee, U.P., India, 1963 7th Edition, 1990.
26. "*Soil Mechanics and Foundation*" (Translated into Arabic and published in Iraq, 1986).