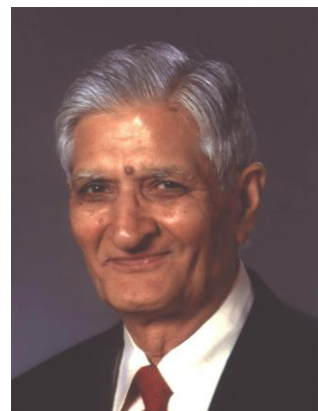


# RESUMÉ

## 1. NAME:

Shamsher Prakash<sup>1</sup>, P.E., Ph.D.  
Professor Emeritus,  
Department of Civil Engineering  
Missouri University of Science and  
Technology  
Rolla, MO 65409-0030  
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ANAND KUTIR  
1707 Jackson Circle  
Rolla, MO 65401  
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Fax: (573) 364-5572  
<http://www.yoga10.org>



## 2. DATE OF BIRTH:

January 3, 1933

## 3. MARITAL STATUS:

Married

## 4. EDUCATION:

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

## 5. POSITIONS HELD:

September 1, 2000 to present Professor Emeritus, Missouri University of Science and Technology  
September 1980-2000 Professor of Civil Engineering, University of Missouri-Rolla<sup>2</sup>  
September 1978-Aug 1980 Associate Professor, University of Missouri-Rolla  
August 1983-June 1985 Director, Central Building Research Institute, Roorkee  
January 1982-July 1983 Professor and Head, Civil Engg. Department,  
University of Roorkee, Roorkee (UP) INDIA<sup>2</sup>  
Dec. 1966-Sept. 1978 Professor, University of Roorkee, Roorkee (UP)  
June 1962-Dec. 1966 Reader University of Roorkee (UP) INDIA  
August 1959-January 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

## 6. REGISTRATION:

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

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<sup>1</sup>President, SP Foundation and YOGA-CHARYA

<sup>2</sup>Dual appointments October 2007

## **7. RESEARCH INTERESTS:**

(1) Non-linear Solutions in Geotechnical Earthquake Engineering and (2) Predictions and Performance in Geotechnical Engineering including;

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

## **8. CAREER ACHIEVEMENT**

### **A. OUTSTANDING RESEARCH ACHIEVEMENTS**

1. Professor Prakash completed both M.S. and Ph.D. at the University of Illinois, Urbana, IL in January 1962 starting August 1959, i.e., in less than 3 years.
2. He introduced “SOIL DYNAMICS” in India in 1962. He set up the first “SOIL DYNAMICS” lab at the then University of Roorkee, Roorkee (Indian Institute of Technology, Roorkee (INDIA)).
3. He introduced the first Graduate course in Soil Dynamics at Roorkee in 1962. At that time, even in the U.S., very few universities offered such a course.
4. He introduced research in the 1960’s at Roorkee in liquefaction of soils, pile foundations under seismic loads, analysis and design of machine foundations, displacements of retaining walls under earthquakes and in-situ dynamic testing of soils.
5. He continued his research on those topics at the University of Missouri-Rolla, where he joined as faculty in 1978 after early retirement from Roorkee.
6. He introduced the concept of “*Displacement Based Design of Rigid Retaining Walls under Seismic Conditions*” in 1973 at Roorkee (Prakash and Nandkumaran (1973)). He continued his work at UMR and he is a recognized leader on the subject. His latest work, Wu and Prakash (2001), Prakash (2001), Munaf and Prakash (2004) represents state of the art on the subject.
7. His research on (a) displacement based design of retaining walls, (Wu and Prakash (2001) (b) liquefaction of sand with fines (Prakash and Puri 2003, 2004) is a state of the art on the subject.
8. He has advanced analysis of design of piles under seismic loading, Prakash and Puri (2008 a,b).

### **B. SPECIAL RECOGNITIONS AND HONORS**

1. Dr. Shamsheer Prakash was 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.

2. Dr. Prakash, Emeritus Professor of Civil Engineering, University of Missouri – Rolla, Rolla, Missouri has been admitted as an Honorary Fellow of Indian Geotechnical Society, December 2006. He has been cited for leadership in Research and Practice of Geotechnical Earthquake Engineering in India and throughout the world. He established the first ever graduate course in Soil Dynamics at his alma mater University of Roorkee (Now-Indian Institute of Technology, Roorkee) in 1962.
3. He has been conferred the IGS – Kuckelman prize of (IN. \$35000) 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 and Recent Advances in Geotechnical Earthquake Engineering and Soil Dynamics 1981-2004, which are unique in character and encourage young engineers and scientists by awarding the Research Awards and prize for Excellence in Practice.
4. He has been admitted to the Order of the Golden Shillelagh, by MSM-University of Missouri–Rolla, Alumni Association in June 2006.
5. Dr. Prakash was recognized as Distinguished Alumni by Civil Engineer Department, University of Illinois (UIUC) in April 2004 for his contribution on liquefaction of sands-silt mixtures and displacements based design of retaining structures.
6. He has been conferred 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.
7. He has also been conferred 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 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 and the 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 and offers free classes and lectures worldwide on meditation and peace of mind.
8. Dr. Prakash has also been admitted as Life Member of American Society of Civil Engineers for his continued support to the society.

9. He was member of a U.S. delegation to U.S.-Taiwan workshop on Liquefaction, Taipei, Nov. 2003.

10. Dr. Prakash was appointed Emeritus Professor of Civil Engineering by University of Missouri–Rolla for his meritorious service, (September 2000).

11. He is recipient of the Federation of Indian Chamber of Commerce and Industry (FICCI) Research Award of IN (\$50,000) 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.

12. He also received the Jai Krishna PRIZE of Institution of Engineers for his paper on “Liquefaction Analysis of Soils” and “Best Paper Award of the Indian Geot. Society in 1984.

13. Dr. Prakash was one of the first few to introduce in-situ tests for evaluating dynamic characteristics and then to popularize their application on several important project sites. His studies in this area led to formation of standards for determination of dynamic properties and have been adopted by the Indian Standards Institution (Bureau of Indian Standards).

14. Dr. Prakash set up appropriate laboratory facilities for studies on liquefaction of sands and silts. His efforts resulted in major recommendations in this area. The laboratory criterion for liquefaction of soils was developed.

15. Dr. Prakash and his team of associates at the Central Building Research Institute have been busy in developing 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. Dr. Prakash’s researches are of practical application.

16. He has been invited as an officer of International Conf. on Soil Mech. and Found. Engg. of the International Society of Soil Mechanics and Foundation Engineering beginning 1973 as:

- (a) Panelist on Deep Foundations, 16<sup>th</sup> 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.

17. He has been invited as Keynote and State of the Art Speaker at several International and National Conferences as:

- (a) Liquefaction of Soils, Lanzhou Institute of Seismology, China, October 2008
- (b) Piles Foundations under Earthquakes, Hangzhou University, Hangzhou and Zhejiang University, Shanghai, China, October 2008
- Special lecture to Met. Section ASCE NY, April 2007
- (c) Keynote Lecturer, IGC - 2006 Madras, December 2006
- (d) Keynote to Geo - Singapore, December 2006
- (e) Keynote Lecturer, IGC – 2005, Ahmedabad, December 2005
- (f) Invited Speaker to Workshop on Geotechnical Earthquake Engineering, Tirana, (Albania), September 2004
- (g) Invited Speaker on Liquefaction of Silts, US-Taiwan Workshop, Taipei, Nov. 2003
- (h) Keynote Speaker – “Geotechnical Earthquake Engineering and Infrastructure Development” – IGC 2003, Roorkee
- (i) Keynote Speaker – “Stability of Retaining Structures” –IGC 2001, Indore
- (j) Keynote Speaker – “Teaching of Geotechnical Engineering” –IGC2000, Allahabad
- (k) State of the Art - Recent Advances in Soil Dyn., XI Asian Reg. Conf. SM FE, August 1999
- (l) State of the Art - Recent Advances in Geot. Eq. Engg, XI Danube European Conf. on SM&FE (Croatia), May 1998
- (m) ASCE/PA DOT Harrisburg, PA, Invited Lecturer, 1998
- (n) Int'l Workshop on Soil Dynamics Lisbon (Portugal), 1992 Invited State of the Art Speaker
- (o) Indian Society of Earthquake Technology - Annual Lecture, January 1988
- (p) Indian Geotechnical Society - Annual Lecturer 1983
- (q) Member – Phi Kappa Phi
- (r) President, Indian Geotech. Soc. 1971-73, 1973-75

18. He was named Honorary Editor, International Journal of Case Histories in Geotechnical Engineering, 2004.

### C. SPECIAL SERVICE TO PROFESSION

1. He chaired four International Conferences on Recent Advances in Geotechnical Earthquake Engineering and Soil Dynamics, University of Missouri – Rolla, First 1981, St. Louis, Missouri, Second 1991, St. Louis, Missouri, Third 1995 St. Louis, Missouri and Fourth 2001 San Diego CA. He started this series of conferences at UMR, when this subject was in infancy worldwide and he has been commended for this initiative by all the senior professionals around the world.

2. He also 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, Fifth International Conference on Recent Advances in Geotechnical Earthquake Engineering and Soil Dynamics in San Diego, California, May 2010. His conferences have had participation from 30+ countries (see below). This is a unique service to the profession. No other professor anywhere has chaired so many International Conferences in Geotechnical Engineering successfully.

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) and 2008 (Arlington, VA)

(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 Geotech. Soc. 1971-73, 1973-75

(b) Chairman, National Committee on Science and Technology, Govt. of India, to draft recommendations on "Foundation Design and Construction", 1974

**Table 1. International Participation in Geotechnical Engineering Conferences: Organized by University of Missouri–Rolla/Missouri University of Science and Technology**

| CONFERENCES  | TOTAL PARTICIPANTS | TOTAL COUNTRIES | FOREIGN PARTICIPATION | PERCENT |
|--|--------------------|-----------------|-----------------------|---------|
| (First) International Soil Dynamics<br><b>1981</b>   | 304                | 24              | 125                   | 41%     |
| (First) International Case Histories<br><b>1984</b>  | 189                | 29              | 81                    | 43%     |
| (Second) International Case Histories<br><b>1988</b> | 250                | 23              | 93                    | 37%     |
| (Second) International Soil Dynamics<br><b>1991</b>  | 320                | 34              | 134                   | 42%     |
| (Third) International Case Histories<br><b>1993</b>  | 232                | 34              | 94                    | 41%     |
| (Third) International Soil Dynamics<br><b>1995</b>   | 220                | 32              | 102                   | 46%     |
| (Fourth) International Case Histories<br><b>1998</b> | 165                | 32              | 65                    | 39%     |
| (Fifth) Intern. Earthquake Conference<br><b>2001</b> | 338                | 33              | 191                   | 57%     |
| (Fifth) International Case Histories<br><b>2004</b>  | 328                | 37              | 154                   | 47%     |
| (Sixth) International Case Histories<br><b>2008</b>  | 318                | 43              | 170                   | 54%     |

## 9. 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.

## 10. PUBLICATIONS:

### Books Published in USA

1. "*Soil Dynamics*" (Second Edition) by Shamsheer Prakash and V.K.Puri, under Preparation.
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. Sixth International Conference on Case Histories in Geot. Eng., Arlington, VA August 2008 CD-ROM
8. Proc. Fifth International Conference on Case Histories in Geot. Eng., New York, NY April 2004 CD-ROM
9. Proc. Fourth International Conf. On Recent Advances in Geot. Eng., Soil Dynamics San Diego CD-ROM March 2001
10. Proc. Fourth Intern. Conf on Case Histories in Geot Engg 1998 UMR (CD-ROM).
11. Seismic Analysis and Design for soil Pile-Structure Interaction, 1997 ASCE, Spec. Geot. Publication 70.
12. Analysis and Design of Retaining Structures Against Earthquakes, 1996 ASCE Geot. Spec. Pub. No 60.
13. Ground Failure under Earthquakes, ASCE Geot. Engg. Series No 44 October 1994 Co-Editor, Panos Dakoulas.
14. Piles under Dynamic Loads, ASCE Geot Engg Series 34, Sept. 1992.
- 15-16. Proc 3<sup>rd</sup> Intern Conference on Geo Earthquake Engg, 1995, 2<sup>nd</sup> 1991 and 1<sup>st</sup> 1981.
- 17-19. Proc Third International conf on Case Histories 1993, 2<sup>nd</sup> 1988, 1<sup>st</sup> 1984.

#### Published in INDIA

20. "*Soil Dynamics*" (Translated into Chinese and published in China, 1985).
21. "*Analysis and Design of Foundations and Retaining Structures*," by Shamsheer Prakash, Gopal Ranjan and Swami Saran; Sarita Publishers, Meerut, Dec. 1979.
22. "*Laboratory Geotechnical Testing*," by Shamsheer Prakash and P.K. Jain; Nemchand and Bros., Roorkee, U.P., 1978.
23. "*Problems in Soil Engineering*," by Shamsheer Prakash and Gopal Ranjan; Sarita Prakashan Publishers, Meerut, U.P., 1976.
24. "*Soil Mechanics and Foundation*," by Bharat Singh and Shamsheer Prakash; Nemchand and Bros., Roorkee, U.P., India, 1963 7th Edition, 1990.
25. "*Soil Mechanics and Foundation*" (Translated into Arabic and published in Iraq, 1986).

Technical Papers - 300 Published Papers, 90 presentations at 40+ Institutes in 12 countries

Professional Reports - 94

### **11. SUPERVISED RESEARCH**

(a) Ph D RESEARCH SUPERVISED : 10 in 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-Linear (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. RESEARCH SUPERVISED: 10 in USA and 30 in INDIA

## 12. AFFILIATIONS OF PROFESSIONAL BODIES:

### 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 present
7. Member - ACI Committee 351-Found. for Equip. Machine. 1981 to present
8. Member - Editorial Board, International Journal of Soil Dynamics and Earthquake Engineering, 1982 to present
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

### Society 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 - Inter. Soc. of Soil Mech. and Found. Engr.
17. Member - Earthquake Engineering Research Institute
18. Member - Canadian Geot. Society

## 13. LECTURES AND PRESENTATIONS TO NATIONAL AND INTERNATIONAL CONFERENCES:

| <b>Lecture</b>                           | <b>Place</b>   |
|--|--|
| <b><u>2008</u></b>                       |  |
| Liquefaction of Soils                    | Lanzhou Institute of Seismology, China, October 2008   |
| Pile Foundations                         | Hangzhou University and Zhejiang University, Shanghai, China, October 2008   |
| How to be a Successful Engineer          | St. Louis Section ASCE, St. Louis, MO, October 2008<br>BBSB Engineering College, Fatehgarh Sahib, India, December 2008 |
| <b><u>2007</u></b>                       |  |
| Retaining Structures Under Earthquake    | MET Section.ASCE, New York, NY, April 2007   |
| Invited Lecture on Piles                 | UTCB, Bucharest, Romania, March 2007   |
| Recent Advances on Soil Dynamics         | National Academy of Science, Bulgaria, March 2007  |
| Aseismic Design of Rigid Retaining Walls | Greek Society of SM&FE, Athens, and University of Patras, March 2007   |

| <b>Lecture</b>  | <b>Place</b>   |
|---|--|
| <b><u>2006</u></b>  |  |
| Keynote - Piles Under Earthquakes   | GEO- Singapore, Dec. 2006  |
| Keynote – Recent Advances on Soil Dynamics  | IIT Roorkee – Nov. 2006<br>IGC Madras – Dec. 2006                              |
| <b><u>2005</u></b>  |  |
| Deep Foundations During Earthquakes   | IGC – Ahmedabad, December 2005   |
| Damage to Civil Engs. Structures during Earthquakes   | Punjab Engineering College, Chandigarh (UT) and TIET, Patiala, (Pb)            |
| How to be a Successful Engineer   | Punjab Engineering College, Chandigarh (UT) and TIET, Patiala (Pb)             |
| <b><u>2004</u></b>  |  |
| A Seismic Stability of 2 Bridge Foundations   | IIT, Delhi, and Albanian Geotech Society Tirana                                |
| Retaining Walls under Earthquakes   | IIT Roorkee, Albanian Geotech Society and II Sc, Bangalore                     |
| How to be a Successful Engineer   | MA-NIT, Bhopal   |
| <b><u>2003</u></b>  |  |
| Stability of Abutments of Bridges in Missouri   | Pacific Earthquake Engineering Conference, Canterbury, New Zealand             |
| <b><u>2002</u></b>  |  |
| Health Monitoring of Typical Geotechnical Transportation Structures                             | 12th Europe Conference Earthquake Engineering, London                          |
| <b><u>2001</u></b>  |  |
| Health Monitoring Typical Geotechnical Transportation Structures                                | IGC Indore (India)   |
| <b><u>2000</u></b>  |  |
| Retaining Walls Under Earthquakes   | 12 WCEE Auckland, (NZ)   |
| <b><u>1999</u></b>  |  |
| Theme Lec. - Recent Advances in Soil Dynamics   | XI Asian Reg. Conf. SM FE, SEOUL   |
| <b><u>1998</u></b>  |  |
| Recent Advances in Geot. Eq. Engg. Insitu Liquefaction Resistance of Sands                      | XI Danube European Conf. On SM&FE Intern. Workshop, Liquefaction, Baltimore MD |
| <b><u>1997</u></b>  |  |
| Retaining Structures Under Earthquakes  | ASCE Penn DOT Conf Harrisburg, PA  |
| On Natural Frequencies of Structures Displacements of Rigid Walls Dynamic Soil Pile Interaction | ASCE Sp Session Minneapolis, MN Sinotech Taiwan, Tainan University             |

| <b>Lecture</b>   | <b>Place</b>   |
|--|--|
| <b><u>1996</u></b>   |  |
| Realistic Displacements of Rigid Retaining Walls                     | ASCE Sp. Session Washington DC   |
| Dynamic Soil-Pile Interactions Retaining Walls in Recent Earthquakes | ISOPE 96 - Los Angeles<br>11 WCEE – Acapulco   |
| Dynamic Pile-Soil-Pile Interactions                                  | 11 WCEE – Acapulco   |
| <b><u>1995</u></b>   |  |
| Recent Advances in Soil Dynamics Liquefaction of Soils               | IGC-95 – Bangalore<br>Univ. of Iceland, Reykjavik  |
| Geotechnical Earthquake Engineering Research at UMR                  | Univ. of Roorkee, Roorkee, India   |
| Liquefaction of Silts and Silt Clay Mixtures                         | International Conference of ISOPE-95, the Hague, Netherlands, June 1995  |
| <b><u>1994</u></b>   |  |
| Recent Analysis of Vibrations in Soils                               | Cent. Florida ASCE, Orlando, March 1994  |
| <b><u>1993</u></b>   |  |
| Soil Dynamics in Marine Environment                                  | 3rd Intern. Conf. of ISOPE, Singapore, June 1993   |
| <b><u>1992</u></b>   |  |
| Piles under Marine Conditions  | 2nd Intern. Conf. of ISOPE, San Francisco, June 1992   |
| <b><u>1991</u></b>   |  |
| Recent Advances in Geot. Eq. Engineering                             | IX Asian Reg. Conf. SMFE Bangkok, December 1991  |
| Prediction and Performance in Geotechnical Engineering               | Institution of Engineers (Kenya) Univ. of Nairobi-Kenya, Dept. of Civil Engineering, July 1991   |
| Geotechnical Engineering on the threshold of 21st Century            | Univ. of Nairobi-Kenya, Dept. of Civil Engg, July 1991   |
| Damage to Civil Engineering Structures in Recent Earthquakes         | Univ. of Nairobi-Kenya, Dept. of Civil Engg, July 1991   |
| Analysis and Design of Pile Foundations                              | Univ. of Nairobi-Kenya, Dept. of Civil Engg, July 1991   |
| Analysis and Design of Machine Foundations                           | Univ. of Nairobi-Kenya, Dept. of Civil Engg, July 1991   |
| <b><u>1990</u></b>   |  |
| Role of Model Tests in Geot. Earthquake Engr.                        | 9th Symp. Eq. Engg. Roorkee, Dec. 1990   |
| Soil Dynamics and Marine Foundations                                 |  |
| Geotechnical Engineering on the Threshold of the 21st Century        | Nihon University, Tokyo (Japan) and "Institute of Soil and Snow Mechanics," Niigata (Japan), June 1990   |
| Pile Foundations Under Dynamic Conditions                            | IGC-90, Bombay, Dec. 1990  |
| Predictions and Performance in Geotechnical Engineering              | a) Public Works Res. Inst., Tsuba City, (Japan) June 1990<br>b) Society of Soil Mechanics and Foundation Engineering and Kyushu University, Fukuoka, (Japan) June 1990 |

**Lecture****1990 (continued)**

Displacements of Embankments  
under Static and Dynamic Loads

**Place**

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

Theme lecture to Indian Geotechnical Conference,  
Allahabad, December 1988  
Lecture to Institution of Engineer, Roorkee (UP),  
December 1988  
Intern. Conf. of Case Histories in Geot. Engr., St. Louis,  
Missouri, June 1988  
ISET Annual Lecture, Roorkee, January 1988

Pile Foundation Under Dynamic  
Loads

**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

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

Future Problems of Geotechnical  
Earthquake Engineering  
Analysis and Design of Pile  
Foundations Under Earthquake Loads

International Conference on Recent Advances in  
Geotechnical Engineering and Soil Dynamics, St. Louis,  
Missouri, April 1981  
International Convention of American Society of Civil  
Engineers, May 1981  
a) Netherlands Society of Soil Mechanics and Delft  
Laboratories, Delft (Netherlands), September 1980  
b) Japan Steel Pipe Pile Association, Tokyo (Japan), July  
1979  
c) General Services Administration, US Government,  
Washington, D.C., March 1984  
d) Washington University, St. Louis, Missouri, 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, Evanston, Illinois, November  
1978  
j) University of New South Wales, Kingston NSW,  
Australia, August 1977  
k) Sydney University, Sydney NSW, Australia, August  
1977

**Lecture**  
**Before 1987 (continued)**

**Place**

|  |   |
|--|---|
|  | 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 (Australia), July 1975  |
|  | q) University of Melbourne, Victoria (Australia), August 1975   |
|  | r) University of Singapore, Singapore, August 1975  |
| Behavior of Footings Under Dynamic Loads               | Conference 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, University of NSW, Sydney, (Australia), 1975  |
| Past and Future of Geotechnical Earthquake Engineering | a) New York Polytechnic Institute, Brooklyn, New York, November 1985<br>b) National Bureau of Standards, Washington, D.C., March 1984   |
| Liquefaction of Soils                                  | a) General Services Administration, US Government, Washington, D.C., March 1984<br>b) Washington University, St. Louis, Missouri, Spring 1980<br>c) Ecole Polytechnique Federals de Lusanne, (Switzerland), June 1980<br>d) University of Illinois, Chicago, Illinois, December 1979<br>e) Detroit Institute of Technology, Detroit, Michigan, July 1976<br>f) Monash University, Melbourne (Australia), August 1975  |
| Retaining Walls Under Earthquakes                      | g) Ohio State University, Columbus, Ohio, July 1976<br>a) Laboratoire Central Des Ponts et Chaussées, Paris (France), June 1980<br>b) Virginia Polytechnic Institute and State University, Blacksburg, Virginia, November 1979<br>c) California State University, Long Beach, California, August 1979<br>d) University of British Columbia, Vancouver, B.C., October 1979<br>e) Purdue University, West Lafayette, Indiana<br>f) Kyushu University, Fukuoka, (Japan), August 1977<br><br>g) University of California, Berkeley, California, July 1976<br>h) University of California, Sacramento, California, July 1976 |

**Lecture**  
**Before 1987 (continued)**

**Place**

|  |  |
|--|--|
|  | i) University of Southern Australia, Adelaide (Australia), July 1975 |
|  | j) Chulalongkorn University, Bangkok (Thailand), August 1975         |
| Low Cost Housing                           | k) Indian Institute of Technology, New Delhi, June 1979              |
|  | 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 | a) Kings College, London (UK), June 1980                             |
|  | b) University 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)           |

**14. CONSULTING EXPERIENCE:**

1. Design of Machine Foundations 1997
2. Design of Hammer Foundations 1996
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

**15. 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

## **16. 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.

## 17. PAPERS PUBLISHED (300 TOTAL) (see attached)

## 18. CIVIC ACTIVITIES AND PHILANTHROPIC ENDEAVORS

He established the Shamsher Prakash Foundation in 1988 for uplift of mankind through their program in YOGA, GEOTECHNICAL ENGINEERING, EDUCATION and PEACE.

### (a) SP RESEARCH AWARDS AND PRIZES IN GEOTECHNICAL ENGINEERING AND OTHER PRIZES

(i) Shamsher Prakash Foundation has established the following awards and prizes:

1. Shamsher Prakash Research Award in Geotechnical Engineering, US \$1100 cash and a plaque. This award has been made annually since 1990 and award winners include professionals from Canada, Greece, India, Italy, Japan Thailand, United Kingdom, and USA.

The following are recipients of the awards so far:

|  |                                      |
|--|--------------------------------------|
| <b>Itai Einav (Australia)</b><br><b>2008</b>                   | Ikuo Towhata (Japan)<br><b>1998</b>  |
| Ellen Rathje (USA)<br>Tarek Abdoun (USA)<br><b>2007</b>        | Raymond B. Seed (USA)<br><b>1997</b> |
| Jonathan Stewart (USA)<br>Mitsu Okamura (Japan)<br><b>2006</b> | Raj Siddharthan (USA)<br><b>1997</b> |
| Rodrigo Salgado (USA)<br>Gopal Madabhushi (UK)<br><b>2005</b>  | Ahmed Elgamal (USA)<br><b>1996</b>   |
| Juan M. Pestana(USA)<br><b>2004</b>                            | Panos Dakoulas (USA)<br><b>1995</b>  |

|  |  |
|--|--|
| D.N. Singh (India)<br>Hao-Sui Yu (UK)<br><b>2003</b> | M Pastor (Spain)<br>Susumu Iai (Japan)<br><b>1994</b>          |
| George Mylonakis (USA)<br><b>2002</b>                | D.T Bergado (Thailand)<br>Shoba K. Bathia (USA)<br><b>1993</b> |
| Ross W. Boulanger (USA)<br><b>2001</b>               | R. Kerry Rowe (Canada)<br><b>1992</b>                          |
| Roberto Paolucci (Italy)<br><b>2000</b>              | George Gazetas (Greece)<br><b>1990</b>                         |
| Jonathan D. Bray (USA)<br><b>1999</b>                |  |

- (ii). Shamsher Prakash Prize for Excellence in the Practice of Geotechnical Engineering, US \$1100 cash and a plaque. This prize has been instituted on the Tenth anniversary of the Shamsher Prakash Foundation and is awarded annually. The winners include professionals from Israel, Korea, United Kingdom, and USA.

The following are recipients of the PRIZES so far:

|  |
|--|
| <b>2008</b>  |
| Mounir Bouassida (Tunisia)<br>2006                               |
| Hyu Shin - Korea<br><b>2005</b>                                  |
| Jesus Gomez (USA)<br><b>2004</b>                                 |
| Sissy Nikolaou (USA)<br>Yossef H. Hatzor (Israel)<br><b>2003</b> |
| Neven Matasovic (USA)<br><b>2001</b>                             |
| Scott Steedman (UK)<br><b>1999</b>                               |

- (iii) Shamsher Prakash Research prize in Geotechnical Engineering for professionals from India is administered through Indian Institute Technology, Roorkee. It consists of a cash prize (IN. \$50,000) and a citation. This prize has been awarded three times so far.
- (iv) Srimati Shalini prize for Creative Design was instituted in India in 2005 for undergraduate students of any discipline. The first prize is (IN. \$20,000).
- (v) Shamsher and Sally Prakash Scholarship for UG Civil Engineering students and University of Missouri – Rolla, \$500 since 2006.
- (vi) Shamsher and Sally Prakash prize for Creative Design in Civil Engineering, UMR \$500 since 2007.

(vii) 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.

(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 for Seniors, Senior Center, Rolla, Missouri 2007.
2. Yoga and Pranayam for All, Senior Center, Rolla, Missouri 2008.
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.
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. Talk to India Association, Swansea (UK), May, 1980.
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 Shamsher Prakash  
(This text can be downloaded from website [www.yoga10.org](http://www.yoga10.org))
- (ii) Introduction to Prevention and Yoga, SP Foundation 1995

(e) LOCAL PRESS COVERAGE

Pp 19-21 below

# ROLLA DAILY NEWS

104 Years of Public Service

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Rolla, Mo., 65401, Wednesday, March 28, 1979

20 cents Six

## friends



**S**hamsar Prakash is 46 years old, but he doesn't look it. "Well, you shouldn't, if you practice yoga," he says. "People who practice yoga aren't sick as

much." He's practiced yoga for 15 years, and in that time he hasn't had a cold or cough. "I get sick sometimes, like anybody else," he says. "Yoga

is more preventive than curative. It isn't going to help you if you're in an automobile accident, or have cancer. But it will help prevent the common illnesses that build up to more serious illnesses."

He is a vegetarian and a non-smoker, and believes people who follow the same practices will be healthier and more successful at yoga, but says, "I'm not fussy about food. I don't insist my students stick to a vegetarian diet. And I don't insist they not smoke." With an impish smile he adds, "It cuts the enrollment down." He says those who practice yoga for awhile may stop smoking anyway.

What he's got is style with a smile.

"Yoga makes me more cheerful," he says. "I feel more able to cope with disappointments, stress, financial pressures."

Right now he's broke, but he isn't worrying about it. Instead, he has analyzed the situation calmly, looked at the possibilities, worked out a plan to climb out of the red, and turned his attention back to his studies in civil engineering at UMR.

He said goodbye to his sisters (one of whom also practices yoga) and brothers in October when he came to the U.S., and will be here two years before returning to India. In the meantime, he's willing to share his health secrets with anyone interested, at no charge. He'll be teaching his first yoga session in St. Pat's Ballroom in UMR's University Center West at 7:30 p.m. April 2.

He may not stand them on their ears, at first. But then he has a 15-year head start.

## Professor Says Yoga Helps Mind, Body

### It's Spiritual, Too But Not Religion, Says Enthusiast

Shambur Prakash, a civil engineering professor at UMR, defines yoga as "a scientific way for total personality development of a householder in the busy world of today. And though many people view yoga as nothing more than another form of exercise for seemingly special individuals who have so-called limber bodies to build strength and flexibility, it is actually a code of moral ethics combined with a regime of exercise for anyone who wishes to build a supple and limber body."

And as far as Prakash is concerned, these misconceptions that people foster towards the art of yoga are what he feels might be the things deterring people from pursuing this plan for total-body betterment.

"There are a few incorrect beliefs that people hold towards yoga and one of them is that it is a practice for 'special' people," he said. "That is not true, though, because it is something that any householder can pursue."

Among this list of misconceptions also lies the belief that yoga is some type of pagan religion.

"It isn't so wide spread as it used to be," Prakash said, "and it certainly isn't true. Yoga is not a religion, it is a way to make your body look and feel better in many ways."

According to Prakash, it only takes a daily regimen of 15 minutes to reap a bountiful list of achievements that would be beneficial to almost anyone.

"There are three things or goals that can be achieved by practicing yoga," he said. "One is the alleviation of colds, backaches and headaches."

This alleviation is achieved through the cleansing of the nasal passages and other vital internal systems paired with a system of specially designed exercises. Prakash makes these techniques available in an eight-~~week~~ series of classes that he has been offering to the public, free of charge, since 1979.

"In my class, I teach the students the basic techniques of yoga," he explained. "In India, we learn that we have a debt to the society in which we live. I have learned so much from the American society and I feel that this is one way I can repay my debt. And the yoga is my hobby and I enjoy teaching it."

But Prakash, who has been a yoga enthusiast for 25 years, is quick to point out that yoga is not a cure-all for every ailment known to mankind.

"We are very trustworthy of doc-



Shambur Prakash, professor of civil engineering at UMR and avid yoga enthusiast, explains the many aspects of the art of practicing yoga. Although many people may feel that special physical predispositions are required to be a

successful yoga practitioner, Prakash stated that it is really a system of "total-body betterment" from which anyone can reap a long list of benefits. Prakash will begin teaching yoga classes in Rolla on April 20.

And we will allow them to do all types of things to the outside of our body, yoga is a way to clean the internal body and develop the thought process of the mind to help one feel better," he said. "What yoga is not, is a way to prevent or cure every disease, such as cancer. No one knows where it comes from and yoga doesn't claim to be able to cure it."

Prakash, who has also written a book on the subject of Yoga entitled "Yoga for the Householder," explained in the publication that there are eight basic steps in the performance of yoga, according to Rishi Patanjali, who prepared a comprehensive treatise on the subject, "Patanjali's Yoga Darshana Sutra." Completed in 1986, Prakash's book was published in India, both by himself and a country which he visits quite frequently.

In a brief synopsis, Prakash wrote of Yoga's ancient history.

"In ancient times, people used to live more in nature than what the present day living permits. They observed their environment in the minutest detail. They observed the animals, the birds, human beings and even their own minds. By this sheer observation over a period of time with a receptive mind, it was discovered that amongst other things, the key to good health is alternate stretching and relaxation of the human body.

Also for a healthy system, the body has to remain free from dirt and residues after the digestion of food."

The first two steps in art of yoga are the basic foundation of its code of ethics. According to Prakash, thoughts and actions are divided into the categories of yama, the do nots, and niyama, the dos.

Prakash gave an example of the do nots or yama as being "do not tell a lie," and went on to state that "love thy neighbor" was an example of niyama or the dos.

"Yoga is a good way to develop one's mental capacities — one's ability to remain alert, be efficient and pay better attention to things," he said. "What a person is trying to do in yoga is to understand himself better and one's own thought processes. And then too, yoga is a spiritual type of activity that helps to make a person feel more at ease and calm."

The third step, or asana, places emphasis on posture and is comprised of two basic philosophies. One places great importance on keeping the spine supple and flexible; the other divides the various limbs of the body into complementary pairs called the sarvang asana and bhujang asana, both of which work the spine in one direction and then stretch in another.

The sarvang asana tones the limbs by stimulating the thyroid gland. Prakash said that there are postures

and exercises for all parts of the human body and that to test an individual's physical fitness, their bodily condition must be observed. A fit person will have regular, daily bowel movements, no colds, no coughs and no headaches.

"Although I myself am a vegetarian, I do not try to change the habits of my students," he said. "I do suggest incorporating more whole-grain foods into the diet, but it isn't mandatory."

The fourth step in the cycle of yoga is pranayama, the control and regulation of breathing. In this step, a student sits comfortably and begins to practice controlled breathing. According to Prakash, there are many types of breathing techniques and styles. Examples are diaphragmatic breathing, abdominal breathing, alternate breathing and there are different meanings and advantages of each type.

But no matter what the type of technique being used, the yoga student or instructor does have a particular purpose in mind during these periods of regulated breathing — to gain control of that which they consider to be the vital force in life, pranic energy.

"Pranic energy is a type that starts out very strong and then weakens as it passes down," Prakash explained. "When breathing, the energy goes in

with the breath and must be differentiated from the air. It is used for well-being, spiritual uplift and the development of one's mental facilities."

The remaining four yoga steps of pratyahara, withdrawal; dharna, fixation; dhyana, concentration, and samadhi, ecstasy, are considered spiritual in character and belong to either directed thought, a state of mind in which one is thinking of a particular event or remembering something out of the past, or beyond thought, a state in which the mind is not applied to any topic and does not recall anything from memory.

"One thing that I want to stress in that yoga does not do miracles," Prakash emphasized. "It is one's own teacher can only initiate one to learn the techniques. And only by the regular practice of those techniques that are learned, can one reap the benefits of yoga."

Discussing the best time to engage in yoga, Prakash went on to state that he believes it to be better to practice yoga on an empty stomach — either in the morning before breakfast or in evening before supper.

Prakash will begin offering yoga classes on April 20. The classes will begin at 8:30 p.m. on Monday evenings. For more information on the classes or to register, call Prakash at 304-5177.

**UMR professor: 'Yoga is a way of life'**

Kristen Jump Staff Writer

Starting Wednesdays, seniors will have the option of attending a free yoga class, focusing on breathing, at the Holloway House.

Dr. Shamsheer Prakash, a professor emeritus from the University of Missouri-Rolla and head of the Shamsheer Prakash Foundation, will be leading the classes.

Prakash has been teaching yoga in Rolla, St. Louis, Kansas City and around the world since 1979. He said his senior yoga classes will focus on breathing, not physical exercises.

"We will be working on not only the physical act of breathing, but also on directing our minds not to run away from the practice," Prakash said.

In his classes, Prakash starts with warm-up exercises first, and then moves to pranayam, which is the regulation of breath. There are seven different types of pranayam including bhastrika, kapalbhati, anulom-vilom, bhrumri, ujjai, shetalee and mahabanda. These are all different types of breathing with subtle differences. Prakash said yoga has made all the difference in his life -- since 1962 he has only had one bout with the common cold, he never gets headaches, and at 74 years of age he doesn't need any medication. "Yoga is a way of life," Prakash said. "I learned all these things as a child in India from monks that came in to teach us. This has already given me so much that I feel like I should give back what I can."

Prakash gives back through his foundation, and by offering free classes and informational pamphlets and books. His Web site, [www.yoga10.org](http://www.yoga10.org), has a copy of his yoga book.



Teaching yoga -- Shamsheer Prakash will offer free senior yoga classes starting Wednesday and continuing every week through August at the Holloway House.

The Shamsheer Prakash Foundation (SPF) is non-profit organization that was founded in 1989 in the U.S. and 1988 in India. It has four principle focus areas: geotechnical engineering, yoga, peace and the JJ Divine School for Children.

Each year, SPF awards \$1,100 and a plaque to young engineers who specialize in geotechnical engineering or geotechnical earthquake engineering. The research award and the excellence prize for practice are the two annual awards. The nominees are judged by an international group of experts each year. Winners have come from around the world, including Greece, Canada, Thailand, the USA, Spain, Japan, Italy, India, Israel, Tunisia and Korea.

SPF arranges classes, lectures talks and yoga demonstrations through out the year, and they have published "Introduction to Prevention and Yoga," as a guide to increasing physical, mental and spiritual well-being.

To promote peace, each year the foundation sponsors an essay competition for junior high through high school students on subjects such as peace, inner peace, world peace, peace in the community and peace at home.

The JJ Divine School for Children is an elementary school for children of migrant laborers in Khet Purralli, India. SPF provides books and clothing for the students, as well as instruction.

The senior yoga classes will be from 10 a.m. to 10:45 p.m. at the Holloway house starting Wednesday, and will continue every Wednesday of August.

## 19. Complete List of Papers Published:

### 1960-64

1. Prakash, S. and S. Venkatesan (1960) "Characteristics of Dense Sand at Different Rates of Strains," Journal, Scientific and Industrial Research 1960, Vol. 19A, 5, pp. 219-223.
2. Prakash, S. and S. Gupta (1962), "Dynamic Behavior of Soils," Proc. Second Symposium on Earthquake Engineering, University of Roorkee, Nov. 1962, pp. 74-96.
3. Davisson, M.T. and S. Prakash (1963), "A Review of Soil Pole Behavior," Highway Research Record No. 39, 1963, pp. 25-48.
4. Prakash, S. and U.K. Bhatia (1964), "A Review of Machine Foundation Behavior," Bulletin, Indian Society of Earthquake Technology," Vol. 1, No. 1, Jan. 1964, pp. 45-64.
5. Prakash, S. and G. Subramanyam (1964), "Load Carrying Capacity of Battered Piles," Research Journal, University of Roorkee, Vol. VII, No. 1 and 2, Sept. 1964, pp. 29-46.

### 1965

6. Prakash, S. and S. L. Agarwal (1965), "Study of Vertical Pile Under Dynamic Lateral Loads," Proc., Third World Conference on Earthquake Engineering, New Zealand, Jan.-Feb. 1965, Vol. III, pp. 215-229.
7. Krishna, J. and S. Prakash (1965), "Earth Dams Subjected to Earthquakes," Proc., Third World Conference on Earthquake Engineering, New Zealand, Jan.- Feb. 1965, Vol. I, pp. 83-93.
8. Prakash, S. (1965), "Field Investigations for Machine Foundations," Proc., Symposium on Foundation of Power Houses and Heavy Machines," Poona, March 1965, pp. 45-50.
9. Prakash, S. (1965), Physical Properties of Clay," Agriculture Engineer, Allahabad, 1965.
10. Mathur, J.N. and S. Prakash (1965), "Natural Frequency of Machine Foundation in a Two Layer System," Proc., Symposium on Foundation of Power Houses and Heavy Machines," Poona, March 1965, pp. 143. 141.
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