**Steven D. Glaser, PH.D.**

Professor, Department of Civil and Environmental Engineering

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**Education**

**Ph.D**. in Geotechnical Engineering completed October 5, 1990 at The University of Texas at Austin. Dissertation: *Acoustic Emission Waveforms Produced by Discrete Crack Propagation in Rock*. Thesis advisor: Prof. Priscilla P. Nelson.

**M.S.**, 1986, The University of Texas at Austin, Geotechnical Engineering.

**B.S.C.E.**, 1984, The University of Texas at Austin.

**B.A**. in Philosophy, 1975, Clark University, Worcester, MA. *Concentration in Metaphysics and Morals,* University of London, London, England, 1972.

**Apprentice Training program** of Local 77, International Union of Operating Engineers, 1977; graduate, 4-year program.

**Honors**

Chair of the Faculty of the UCB College of Engineering

Distinguished Affiliated Professor, Technical University of Munich, 2012 - present

Fellow, Institute of Advanced Studies, Technical University of Munich, 2012 - present

TÜV SÜD Guest Professor, Technical University of Munich, 2010 - 2011

Fulbright Research-Lecturer Award, The Technion, 2003

Member, NAE Committee on Geological and Geotechnical Engineering in the New Millennium: Opportunities for Research and Technological Innovation, 2003-2005.

Session Organizer, Japan-America Frontiers of Engineering Symposium, NAE, 2003

National Science Foundation Young Investigator Award, 1994

Basic Research Award 1993, US National Committee for Rock Mechanics, NAS/NRC

Texas Mining and Mineral Resources Research Institute Scholarship, 1988-1989.

University Fellow, University of Texas at Austin, 1987-1988.

Presidential Fellowship, University of Texas at Austin, 1987-1988, 1985-1986.

Woodward-Clyde Fellowship in the Earth Sciences, 1985-1987.

**Significant Employment History**

Professor, Department of Civil and Environmental Engineering, University of California, Berkeley, CA., July 2005 - present.

Distinguished Affiliated Professor, Technical University of Munich, 2013 -.

Associate Professor, Department of Civil and Environmental Engineering, University of California, Berkeley, CA., April 2000 – June 2005.

Assistant Professor, Department of Civil and Environmental Engineering, University of California, Berkeley, CA., January 1997 – March 2000.

Founder and Managing Partner, Metronome Systems, LLC, 2013.

Faculty Scientist, Energy Resources Dept., Lawrence Berkeley National Laboratory, 1997 - present.

Faculty director, Intelligent Infrastructure Initiative, Center for Information Technology Research in the Interest of Society, Feb., 2008 – April, 2015.

Research Associate, Intel Berkeley Laboratory, 2001 - 2005.

Assistant Professor, Engineering Division, Colorado School of Mines, Golden, CO. *Professor of Nondestructive Evaluation,* January 1994 – December 1996*.*

Research Geotechnical Engineer, Structures Div., National Institute of Standards and Technology; Gaithersburg, MD, November, 1991 – December 1993.

Post-Doctoral Fellow, Department of Civil Engineering, The University of Texas at Austin. October 1990 – November 1991.

Graduate student, The University of Texas, Austin*.* September, 1984 – October 5, 1990.

Summer Technical Staff for TRW Inc., San Bernardino, CA., June 1984 – August 1984. *Completed TBM utilization study as constructibility analyst for Deep Basing, special emphasis on tunnel lining design. Estimated cost and lining design of tunnels in rock.*

Drilling and site supervisor for Western-Kharafi on large grain silo foundation project in Baquba, Iraq, October 1980 – July 1981. *Responsibilities included training and supervising thirty-man local crew, drilling, site liaison with resident engineer and general contractor, procuring parts and equipment in Bagdad, and associated planning.*

Driller and mechanic, Western Caisson, McKinney Drilling, 1975 – 1980.

Apprentice, Local 77, International Union of Operating Engineers, 1974–1977.

**Publications, Archival Journals**

1. Selvadurai, P.A., Parker, J.M., and Glaser, S.D., (2017), Numerical Modeling Describing the Effects of Heterogeneous Distributions of Asperities on the Quasi-Static Evolution of Frictional Slip, *Rock Mechanics and Rock Engineering*, accepted.
2. Watteyne, T., Kerkez, B., Pister, K.S.J., Glaser, S.D., (2017), Crystal-Free Network Synchronization, *Transactions on Emerging Telecommunications Technologies*, in review.
3. Selvadurai, P.A., and Glaser, S.D., (2017), Asperity Formations and Their Relation to Seismicity on a Planar Fault in the Laboratory, *Geophysical Journal International*, **208**, 1009–1025.
4. Saltiel, S., Selvadurai, P.A., Bonner, B.P., Glaser, S.D., Ajo-Franklin, J.B., (2017), Experimental Development of Low-Frequency Shear Modulus and Attenuation Measurements in Mated Rock Fractures: Shear Mechanics Due to Asperity Contact Area Changes with Normal Stress, *Geophysics*, **82**(2), M19–M36.
5. Zhang, Z., C.A. Oroza, S.D. Glaser and T. Wattenye, (2017), A Machine-Learning Based Connectivity Model for Complex Terrain Large-Scale Low-Power Wireless Deployments, *IEEE Transactions on Cognitive Communications and Networking*, accepted.
6. Zhang, Z., Glaser, S.D., Wattenye, T., and Malek, S., (2017), American River Hydrological Observatory: Monitoring the Sierra Nevada Snowpack, *IEEE Internet of Things Journal*, *special issue on Large-scale Internet of Things: Theory and Practice*, accepted.
7. Zhang, Z., Glaser, S.D., Bales, R.C., Conklin, M.H., Rice, R.R., and Marks, D.G., (2017), Insights into Mountain Precipitation and Snowpack from a Basin-Scale Wireless-Sensor Network, *Water Resources Research*, DOI: 10.1002/2016WR018825
8. Zhang, Z., Glaser, S.D., Bales, R.C., Conklin, M.H., Rice, R.R., and Marks, D.G., (2017), Technical Report: the Design and Evaluation of a Basin-Scale Wireless Sensor Network for Mountain Hydrology, *Water Resources Research*, **53**(5), 4487–4498.
9. Orosa, C.A., Zheng, Z., Glaser, S.D., and Bales, R.C., (2017), Identication of Representative Sampling Regions, Optimal Sensor Number, and Resilient Network Topologies for Wireless Snow Observatories using LiDAR and Machine Learning, *Water Resources Research*, **52**(10), 8174-8189.
10. Selvadurai, P.A., and Glaser, S.D., (2016), On Factors Controlling Precursor Slip Fronts in the Laboratory and their relation to Slow Slip events in Nature, *Geophysical Research Letters*, **44**(6), 2743–2754.
11. Selvadurai, P.A., and Glaser, S.D., (2015), Laboratory-Developed Contact Models Controlling Instability on Frictional Faults, *Journal of Geophysical Research*, **120**(6), 4208–4236, doi: 10.1002/2014JB011690.
12. Selvadurai, P.A., and Glaser, S.D., (2015), Novel Techniques for Characterizing Frictional Interfaces in the Laboratory, *Sensors*, **15**, 9791-9814; doi:10.3390/s150509791.
13. Magliocco, M., Glaser, S.D., and Kneavsey, T.J., (2015), Laboratory and Numerical Studies of Heat Extraction from Hot Porous Media by Means of Supercritical CO2, *Transport in Porous Media*, **108**(85)–104; DOI 10.1007/s11242-015-0474-0.
14. Sherman, C.S., Rector, J., and Glaser, S.D. (2014), The Effects of Near-Source Heterogeneity on Shear-Wave Evolution, *Geophysics*, **79**(4), T233 – T241.
15. Nakamura, N., Saeki, M., Oguni, O., Buttarazzi, B., Basili, M., and Glaser, S.D., (2014), Energy-Saving Wireless Sensor Node for Relative Positioning of Densely Deployed GPS Network, *Journal of Infrastructure Systems*, **20**(2).
16. Samaranayake, S., Glaser S. D., Holstius D., Monteil, J., Tracton, K., Seto, E., Bayen, A., (2014) Real-Time Estimation of Pollution Emissions and Dispersion from Highway Traffic, *Computer-Aided Civil and Infrastructure Engineering* **29**(7):546-558.
17. Reilly, J., Dashti, S., Ervasti, M., Bray, J.D., Glaser, S.D., Bayen, A., (2013), Mobile Phones as Seismologic Sensors: Building the iShake System, *IEEE Transactions on Automation Science and Engineering*, **10**(2), 242 – 251.
18. Bakun-Mazor, D., Hatzor, Y.H., Glaser, S.D., and Santamarina, J.C., (2013), Thermally Induced “ratchet” Model for Rock Slope Stability with Evidence from Masada, *International Journal of Rock Mechanics and Mining Sciences*, **61**, 196 – 211.
19. Dashti, S., Reilly, J., Bray, J.D., Glaser, S.D., Bayen, A., (2013), iShake: Evaluating the Reliability of Mobile Phones as Seismic Monitoring Instruments, *Earthquake Spectra*, **30**(3), 721 - 742.
20. Welch, S., Kerkez, B., Bales, R., Glaser, S.D., Rittger, K., and Rice, R.R., (2013), Sensor Placement Strategies for SWE Estimation in the American River Basin, *Water Resources Research,***49**, 891 – 903 doi:10.1002/wrcr.20100.
21. Mehta, A., Kerkez, B., Glaser, S.D., and Pister, K.S.J., (2012), TDMA-Based Dual-Mode Communication for Mobile Wireless Sensor Networks, *Sensors*, **12**(12), 16194 – 16210, <http://dx.doi.org/10.3390/s121216194>.
22. Watteyne, T., Vilajosana, X., Kerkez, B., Chraim, F., Weekly, K., Wang, Q., Glaser, S.D., and Pister, K., (2013), OpenWSN: A Standards-Based Low-Power Wireless Development Environment, *Transactions on Emerging Telecommunications Technologies*, **23**(5), 480 – 493.
23. McLaskey, G.C., Thomas, A.M., Glaser, S.D., and Nadeau, R.M., (2012), Fault Healing Promotes High Frequency Earthquakes in the Laboratory and on Natural Faults, *Nature*, **490**(7422), 101 – 104, <http://dx.doi.org/10.1038/nature11512>.
24. McLaskey, G. C., and Glaser, S.D., (2012), Acoustic Emission Sensor Calibration for Absolute Source Measurements, *Journal of Nondestructive Evaluation*, **31**(2), 157–168.
25. Kerkez, B., Glaser, S.D., Bales, R., and Meadows, M.W., (2012), Monitoring Hydrologic Phenomena: Wireless Sensor Networks, *Water Resources Research,* **48**, W09515, <http://dx.doi.org/10.1029/2011WR011214>*.*
26. Moore, J.R., Boleve, A., Sanders, A.W., and Glaser, S.D, (2011), Self-Potential Investigation of Moraine Dam Seepage, *Journal of Applied Geophysics*, **74**, 277 – 286, <http://dx.doi.org/10.1016/j.jappgeo.2011.06.014>.
27. McLaskey, G. C. and Glaser, S. D. (2011), Micromechanics of Asperity Rupture During Laboratory Stick Slip Experiments, *Geophysical Research Letters,* **38**, L12302, [http://dx.doi.org/10.1029/2011GL047507](http://dx.doi.org/10.1029/2011GL047507%22%20%5Ct%20%22_blank)*.*
28. Bakun-Mazor, D., Hatzor, Y.H., and Glaser, S.D., (2011), Dynamic Sliding of Tetrahedral Wedge: the Role of Interface Friction. *International Journal for Numerical and Analytical Methods in Geomechanics*, **36**(3), 249 – 390. <http://dx.doi.org/10.1002/nag.1009>
29. McLaskey, G., and Glaser, S.D., (2011), Hertzian Impact: Experimental Study of the Force Pulse and Resulting Stress Waves, *Journal of the Acoustical Society of America,* **128**(3), 1087 – 1096.
30. Mancio, M., Moore, J.R., Brooks, Z., Monteiro, P.J.M., and Glaser, S.D., (2011), Instantaneous In-Situ Determination of the Water-Cement Ratio of Fresh Concrete, *ACI Materials Journal*, **107**(6), 586 – 592.
31. McLaskey, G., Glaser, S.D., and Grosse, C.U., (2010), Beamforming Array Techniques for Microseismic Monitoring of Large Structures, *Journal of Sound and Vibrations*, 329, 2384 – 2394.
32. Grosse, C.U., Glaser, S.D., and Krüger, R, M., (2010). Initial Development of Wireless Acoustic Emission Sensor Motes for Civil Infrastructure State Monitoring, *Smart Structures & Systems*, **6**(4), 197 – 209.
33. Carey, J.R., Laursen J., Glaser, S.D., Raphael, S., and Miller, G.H., et al., (2010), University of California Research Seminar Network: A Prospectus. PLoS Bio, **8**(1): e1000289. <http://dx.doi.org/10.1371/journal.pbio.1000289>.
34. Tien, I., Glaser, S.D., Aminoff, M.J., Bajcsy, R., and Goodin, D.S., (2009), Results and Validation of Algorithms Used in a Wireless Inertial Measuring System for Gait Analysis in Control Subjects, *IEEE Transactions on Information Technology in Biomedicine*, **14**(4), 904 – 915. <http://dx.doi.org/10.1109/TITB.2009.2021650>.
35. Moore, J.R., Sanders, J.W., Dietrich, W.E., and Glaser, S.D. (2009), Influence of Rock Mass Strength on the Erosion Rate of Alpine Cliffs, *Earth Surface Processes and Landforms*, **34**, 1939 – 1352.
36. To, A.C., Moore, J.R. and Glaser, S.D., (2009), Wavelet Denoising Techniques with Applications to Experimental Geophysical Data, *Signal Processing,* **89**, 144 - 160.
37. Galic, D., Glaser, S.D., and Goodman, R.E., (2008), A Lagrangian Dynamic Analysis of End Effects in a Generalized Shear Experiment, *International Journal of Rock Mechanics*, **45**(8), 1287 – 1305.
38. Glaser, S.D., Ni, S.-H., and Ko, C.-C., (2008), System Identification of Soil Behavior from Vertical Seismic Arrays, *Smart Structures & Systems*, **4**(6), 727 – 740.
39. Galic, D., and Glaser, S.D., (2008), Calculating the Shear Strength of an Asymmetric Sliding Block Under Varying Degrees of Lateral Constraint, *International Journal of Rock Mechanics*, **45**(4), 495 – 512.
40. Glaser, S.D., and Tolman, A., (2008), Sense of Sensing, *Journal of Infrastructure Systems*, **14**(1), 4 – 14.
41. Glaser, S.D., (2008), Editorial for Special Issue, *Journal of Infrastructure Systems*, **14**(1), 2 – 3.
42. McLaskey, G., and Glaser, S.D., (2007), Temporal Evolution and 3-D Locations of Acoustic Emissions Produced from the Drying Shrinkage of Concrete, *Journal of Acoustic Emission*, **25**(1), 52 – 57.
43. Schumacher, T., Higgins, C., Glaser, S.D., and Grosse, C., (2007), Demand on Flexural Tension Steel Reinforcement Anchorage Zones in Full-Scale Bridge Bent Caps Quantified by Means of Acoustic Emission, *Journal of Acoustic Emission*, **25**(1), 316 – 323.
44. Glaser, S.D., Li, H., Wang, M., and Ou, J., and Lynch, J., (2007), Sensor Technology Innovation for Advancement of Structural Health Monitoring: A Strategic Program Plan of US-China Research for the Next Decade, *Smart Structures & Systems*, **3**(2), 221 – 244.
45. Aoki, H., Glaser, S.D., Ikegawa, Y., Boda, S., and Miki, K., (2007), Development and Application of a Wireless Sensor Network for Ground Monitoring, *Journal of the Society of Instrument and Control Engineers* (Japan), **46**(2), 1 – 5.
46. Moore, J.R., and Glaser, S.D. (2007), Self-Potential Observations During Hydraulic Fracturing, *Journal of Geophysical Research*, **112**, B02204, doi:10.1029/2006JB004373.
47. To, A.C., Li, S., and Glaser, S.D., (2006), Propagation of a Mode-III Interfacial Conductive Crack along a Conductive Interface Between Two Piezoelectric Materials, *Wave Motion*, **43**(5), 368 – 386.
48. Chen, M., Glaser, S.D., and Oberheim, T., (2006), Terra-Scope- A MEMS-based Vertical Seismic Array, *Smart Structures & Systems*, **2**(2), 115 – 126.
49. Glaser, S.D., Shoureshi, R., and Pescovitz, D., (2005), Future Sensing Systems, invited paper for inaugural issue of *Smart Structures & Systems,* **1**(1), 103 - 120.
50. To, A.C., Li, S., and Glaser, S.D. (2005), On Scattering in Dissimilar Piezoelectric Materials by an Interfacial Crack, *Quarterly Journal of Mechanics and Applied Mathematics*, **58**(2), 1 – 23.
51. Li, S., To, A.C., and Glaser, S.D. (2005), On Scattering by an Interfacial Crack in Piezoelectric Materials, *Journal of Applied Mechanics*, **72**, 943 – 954.
52. To, A.C., and Glaser, S.D., (2005), Full Waveform Inversion of a 3-D Dislocation Inside an Artificial Rock, *Journal of Sound and Vibration*, **285**(4-5), 835 – 857.
53. Moore, J.R., Glaser, S.D., Morrison, H.F., and Hoversten, G.M., (2004), The Streaming Potential Coupling Coefficient of Liquid Carbon Dioxide Injected into Water Saturated Berea Sandstone, *Geophysical Research Letters*, **31**(17), L17610.
54. Ching, J., To, A., and Glaser, S.D. (2004), Acoustic Emission Source Deconvolution: Bayes vs. Minimax, Fourier vs. Wavelets, and Linear vs. Nonlinear, *Journal of the Acoustical Society of America,* **115**(6), 3048 – 3058*.*
55. Baise, L.R., Glaser, S.D., and Dreger, D., (2003), Site Response at Treasure and Yerba Buena Island, San Francisco Bay, California, *ASCE Journal of Geotechnical Engineering*, **129**(6), 415 – 426.
56. Ching, J., and Glaser, S.D. (2003), Tracking Rapidly Changing Dynamical Systems Using a Semi-Parametric Statistical Method Based on Wavelets, *Earthquake Engineering and Structural Dynamics*, **32**, 2377 – 2406.
57. Ching, J., and Glaser, S.D., (2003), Identification of Soil Degradation During Earthquake Excitations by Baysian Inference, *Earthquake Engineering and Structural Dynamics*, **32**, 845 – 869.
58. Baise, L.G., Hutchings, L., and Glaser, S. (2003), Analysis of Site Response at Yerba Buena Island, San Francisco Bay, California from Weak Motion Recordings, *Bollettino di Geofisica Teorica ed Applicata,* **42**(3-4).
59. Baise, L.G., Dreger, D.S., and Glaser, S.D. (2003), Modeling of the Northern San Francisco Bay Velocity Structure for the 18 August 1999 Bolinas Earthquake, *Bulletin of the Seismological Society of America,* **93**(1), 65 – 479.
60. Baise, L.G., Glaser, S.D., and Sugano, T. (2001), Consistency of Dynamic Site Response at Port Island, *Earthquake Engineering and Structural Dynamics*, **30**(6), 803 – 818.
61. Ching, J., and Glaser, S.D. (2001), 1D Time-Domain Solution for Seismic Ground Motion Prediction, *ASCE J. Geotechnical Engineering*, **127**(1), 36 – 47.
62. Baise, L.G., and Glaser, S.D. (2000), Consistency of Site Response Estimates Made Using System Identification, *Bulletin, Seismological Society of America,* **90**(4), 993 – 1009.
63. Ching, J., and Glaser, S.D. (2000), A Time-Domain Moment Tensor Inversion Technique and Its Verification, *ASCE Geotechnical Special Pub. #102, Trends in Rock Mechanics*, 140 – 151.
64. Glaser, S.D., and Baise, L.G. (2000), System Identification Estimation of Soil Properties at the Lotung Site, *Soil Dynamics and Earthquake Engineering*, **19**(6), 521 – 531.
65. Glaser, S.D., and Doolin, D. (1999), 1998 ARMA Forum - New Directions for U.S. Rock Mechanics, *International Journal of Rock Mechanics*, (invited paper), **37**, 683 – 698.
66. Glaser, S.D. (1998), Comment on Paper O. Moustachi and J.F. Thimus: P-Wave Attenuation in Creeping Rock and System Identification, *Rock Mechanics and Rock Engineering*, **31**(4), 251 – 254.
67. Glaser, S.D., Dudley, J.W., and Shlyapobersky, J. (1998), Active and Passive Acoustic Imaging Inside a Large-Scale Polyaxial Hydraulic Fracture Test, *ASTM STP, Nondestructive and Automated Testing of Soil and Rock Properties*.
68. Glaser, S. D., and Hand, M. Y. (1998), Imaging of Rock Fractures with Low-Frequency Ultrasonic Reflection/Diffraction, *Geotechnical Testing Journal*, **21**(4), 317 – 327.
69. Glaser, S. D., Weiss, G., and Johnson, L.R. (1998), Body Waves Recorded Inside an Elastic Half-Space by an Embedded, Wideband Velocity Sensor, *Journal of the Acoustical Society of America*, **104**(3), 1404 – 1412.
70. Weiss, G. and Glaser, S. D. (1998), Design and Absolute Calibration of an Embedded, Wideband Velocity Sensor, *Transportation Research Record,* **1614**, 43 – 51.
71. Dudley, J.W., Arasteh, M.M., Chudnovsky, A., Ma, J., and Glaser, S.D. (1997), Broadband Acoustic Emission Observations During Fracture Propagation in Rock-like Material, *International Journal of Rock Mechanics,* **34**(3-4), paper # 083.
72. Glaser, S. D. (1996), Insight Into Liquefaction by System Identification, *Geotechnique*, **46**(4), 64 – 655.
73. Glaser, S. D. (1995), System Identification and its Application to Estimating Soil Properties, *ASCE Journal of Geotechnical Engineering*, **121**(7), 553 – 560.
74. Glaser, S. D. and Chung, R. M. (1995), In Situ Methods for Estimating Liquefaction Potential, *EERI Spectra*, **11**(3), 431 – 455.
75. Glaser, S. D. (1994), Surface Displacements due to Earthquake Excitation of Saturated Sands, *EERI Spectra*, **10**(3), 489 – 518.
76. Glaser, S. D., and Nelson P.P. (1992), High-Fidelity Waveform Detection for Acoustic Emissions From Rock, *Materials Evaluation*, **50**(3), 354 – 366.
77. Glaser, S. D., and Nelson P.P. (1992), Acoustic Emissions Produced by Discrete Fracture in Rock–Part 2: Kinematics of crack growth during controlled Mode I and Mode II loading of rock, *International Journal of Rock Mechanics*, **29**(3), 253 – 265.
78. Glaser, S. D., and Nelson, P. P. (1992), Variety of AE Waveforms Produced by Discrete Crack Growth in Rock, *Journal of Acoustic Emission,* **10**, s1 – s12.
79. Nelson, P. P., and Glaser, S. D., (1992), Acoustic Emissions Produced by Discrete Fracture in Rock: Part 1: Effects of system; source location and orientation effects, *International Journal of Rock Mechanics,* **29**(3), 237 – 251.

**Patents Filed**

1. “The sensor apparatus having the wireless data transmission function, and the operation method, and construction of sensor system with this sensor apparatus.” Shingo Boda, Hiroshi Aoki, Kauhide Miki, Steven D. Glaser, Japanese Patent 2005-129644.
2. “Wireless Wildfire Monitoring System.” David M. Doolin, Steven D. Glaser, Nicholas Sitar. Provisional patent application, UC case number B04-102-1
3. "Method and Apparatus for Instantaneously Determining the Water-To-Cement Ratio of Fresh Concrete and Mortar." Monteiro, P.J., Mancio, M., Moore, J.R., and Glaser, S.D. UC case number B07-113.

**Books and Chapters**

1. Bales, R.C., Conklin, M.H., Kerkez, B., Glaser, S.D., Hopmans, J.W., Hunsaker, C.T., Meadows, M., and Hartsough, P.C., (2011), Sampling Strategies in Forest Hydrology and Biogeochemistry, *Forest Hydrology and Biogeochemistry: Synthesis of Past Research and Future Directions, Ecological Studies 216*, D.F. Levia et al. (eds.), DOI 10.1007/978-94-007-1363-5\_2, Springer Science+Business Media B.V.
2. McLaskey, G., and Glaser, S.D., (2009), Nanoseismic Measurement of the Localized Initiation of Sliding Friction, *Proc. Batsheva de Rothschild Seminar on Shear Physics and the Mezzo-Scale in Earthquake and Landslide Mechanics*, EinGedi, Israel, January 2009. Editors, Y. Hatzor, J. Sulem and I. Vardoulakis, CRC Press.
3. Grosse, C.U., Gehlen, C., Glaser, S.D., (2007), Sensing Methods in Civil Engineering for an Efficient Construction Management. In C. Grosse (Ed.): *Advances in Construction Materials*. Springer: Heidelberg, 549 - 561.
4. Committee on Geological and Geotechnical Engineering in the New Millennium, (2006), *Geological and Geotechnical Engineering in the New Millennium: Opportunities for Research and Technological Innovation*, National Academies Press: Washington, 206 p.

**Books Edited**

1. Labuz, J.F., Glaser, S.D., and Dawson, E.; Editors, (2000), *Trends in Rock Mechanics*, Geotechnical Special Pub. #102, ASCE: Reston, VA.

**Refereed Conference and Symposium Proceedings**

1. Brun-Laguna, K., Oroza, C., Zhang, Z., Malek, S., Watteyne, T., and Glaser, S., (2016), SierraNet: monitoring the snowpack in the Sierra Nevada: demo. *CHANTS '16: Proceedings of the Eleventh ACM Workshop on Challenged Networks.* 10.1145/2979683.2979698
2. Brun-Laguna, K., Watteyne, T., Malek, S., Zhang, Z., Oroza, C. and Glaser, S., and Kerkez, B. (2015), SOL: An End-to-end Solution for Real-World Remote Monitoring Systems. *IEEE International Symposium on Personal, Indoor and Mobile Radio Communications (PIMRC)*, Sep 2016, Valencia, Spain.
3. Kerkez, Watteyne, Magliocco, M., Glaser. S.D., and Pister, K., (2010), Feasibility analysis of controller design for adaptive channel hopping, *Proceedings of the Fourth International ICST Conference on Performance Evaluation Methodologies and Tools*, DOI: 10.4108/ICST.VALUETOOLS2009.7934
4. Kerkez, B., Glaser, S.D., Dracup, J.A., and Bales, R.C., (2010), Hybrid System Model of Seasonal Snowpack Water Balance, *Hybrid Systems: Computation and Control, 13th International Conference*, Stockholm, October 19, 2010.
5. Cuevas, N.H., Rector III, J.W., Moore, J.R., and Glaser, S.D., (2010), Electrokinetic Coupling in Hydraulic Fracture Propagation, *Proceedings, Society of Explorational Geologists Annual Conference*, RC-1.3, 1721 – 1725.
6. Kerkez, B, Watteyne, T, Maglioco, M, Glaser, S.D., and Pister, K., (2009), Feasibility Analysis of Controller Design for Adaptive Channel Hopping, *Proceedings of the Fourth International ICST Conference on Performance Evaluation Methodologies and Tools*, #76, ICST.
7. Vehkaoja, A., Iyengar, S., Zakrzewski, M., Jafari, R., Bajcsy, R., Glaser, S.D, Lekkala, J., and Sastry, S, (2007), A Resource Optimized Physical Movement Monitoring Scheme for Environmental and on-Body Sensor Networks, *HealthNet07/Mibisys*, San Juan, Puerto Rico, June 11 - 14, paper #1569043162.
8. Jafari, R., Bajcsy, R., Glaser, S.D., Gnade, B., Sgroi, M., and Sastry, S., (2007), Platform Design for Health-care Monitoring Applications, *Joint Workshop On High Confidence Medical Devices, Software, and Systems (HCMDSS) and Medical Device Plug-and-Play (MD PnP) Interoperability*, June 25-27, 2007 Boston.
9. Jafari, R., Li, W., Bajcsy, R., Glaser, S.D., and Sastry, S., (2007), Physical Activity Monitoring for Assisted Living at Home, *4th International Workshop on Wearable and Implantable Body Sensor Networks*, March 2007, Aachen, Germany, 213 - 220.
10. Kim, S., Pakzad, S., Culler, D.E., Demmel, J., Fenves, G., Glaser, S.D., and Turon, M., (2007), Wireless Sensor Networks for Structural Health Monitoring, P*roceedings of the 6th International Conference on Information Processing in Sensor Networks* (IPSN 2007), Cambridge, MA, April 2007, ACM Press.
11. To, A.C., and Glaser, S.D. (2003), Inversion of the Kinematics of a Simulated Crack Inside an Artificial Rock, *Proceedings, 39th U.S. Rock Mechanics Symposium/12th Panamerican Conference on Soil Mechanics and Geotechnical Engineering*, MIT.
12. Moore, J.R., and Glaser, S.D. (2003), Large-Scale Physical Modeling of Water Injection into Geothermal Reservoirs and Correlation to Self Potential Measurements, *Proceedings, 39th U.S. Rock Mechanics Symposium/12th Panamerican Conference on Soil Mechanics and Geotechnical Engineering*, MIT.
13. Gaskins, L.R., Glaser, S.D., and Sugano, T. (1998), System Identification Validation of Shake Table Models of the Port Island Quay Wall, *Proceedings, ASCE Geo-Institute 1998 Specialty Conference*.
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* “Brainy Buildings,” Interior Design, March, 2004
* Article on smart dust, Sciences et Avenir, March, 2004
* “Smart Dust Motes,” Government Technology magazine, Feb., 2004
* “An Innovative Way to get the Nitty-Gritty on Dirt,” BusinessWeek, Jan. 19, 2004
* “March of the Motes,” NewScientist, cover story, Aug. 23, 2003
* “Tiny remote sensors could reshape research,” San Jose Mercury News, Aug. 12, 2003
* “Smart Bricks, or a Dumb Idea?,” Wired News, June 20, 2003
* “Casting the Wireless Sensor Net,” MIT Technology Review, feature article on embedded sensor networks for environmental/structural monitoring, Greg Huang, July, 2003
* “Engineers Help Preserve Ancient Structures With New “Smart” Sensor Technology,” Engineering Times, July, 2003
* “Go Digital”, BBC World Service Radio, May, 2003
* Wired magazine, April, 2003
* "Sensor Networks from the Silk Road to the Dead Sea," LabNotes, 3(3), UC Berkeley COE, April 2003
* NY Times, Iraq and Tunnels, interviewed by Andy Revkin, March, 20, 2003
* “How the Pentagon is (indirectly) helping restore Chinese cave paintings,” The Art Newspaper, August, 2002
* “How much Stress Can a Poor Rock Stand?” Forefront magazine, Spring, 2002
* “Tiny Sensors Measure Building Health: Matchbox-sized computers placed on critical beams and columns could monitor structural integrity.,” By Blanche Shaheen, Tech Live (TechTV), January 9, 2002
* “Small Sensors Help Measure Building Damage after Quakes,” Small Times, Aug., 2001

**UNIVERSITY SERVICE AND PROFESSIONAL ACTIVITIES**

**A. University Service**

 **1. Department**

 Chair, Operational Committee for the Civil Systems Engineering Program

Chair, Departmental Committee on Information Technology

 Executive Committee

 Strategic Planning Committee

 Graduate Studies Committee

 Faculty search committees

 Energy and Climate Program Committee

 Ad Hoc committee on Systems Program

 Ad Hoc committee on surge from Old Davis

 Departmental search committee for Shop Superintendent

 Departmental Space Committee

 Admissions Officer, GeoEngineering

 Admissions Officer, Civil Systems program

 Graduate Advisor, GeoEngineering

 Graduate Advisor, Systems program

 Faculty advisor, student chapter ASCE

 Undergraduate Advisor

 **2. College**

 Academic Senate Liaison for the review of the EECS department

Chair of the Faculty of the College of Engineering

 Member, Taskforce on a Common Undergraduate Curriculum

 Member, Committee on Energy and Resources

 Member, Jane Lewis Fellowship Committee

Member, Computing, Networking, and Instructional Laboratories Committee, CITRIS/EECS

 **3. University**

 Chair, Berkeley Seismological Laboratory Advisory Committee

 Faculty Director, Center for Information Technology Research for the Interest of Society

 Member, Committee on Research

 Member, Committee on Faculty Welfare

 Member, Graduate Group in Applied Science & Technology

 Member, Chancellor’s Committee on Sustainability

 Member, Research Equipment Grant review for Vice Chancellor for Research

 Member, NSF Partnerships for International Research and Education Grant review for Vice Chancellor for Research

 Member, Academic Senate Disaster Preparedness Work Group

 **4. University of California, System-Wide**

 Member, Academic Council’s Special Committee on Lab Issues (ACSCOLI)

 Member, Committee on Research Policy

 Member, Faculty Search Committee, University of California, Merced

**B. Professional Activities**

 **1. Some Invited lectures**

“Friction Mechanics, Onset of Sliding, and Laboratory Earthquakes,” Keynote, *47th U.S. Rock Mechanics/Geomechanics Symposium*, San Francisco, June 29, 2015.

"Ethics choice of a scientist: the example of Robert Oppenheimer," Invited Panalist, *Physics Department*, UC Berkeley, November 25, 2014.

“Friction Mechanics, Onset of Sliding, and Laboratory Earthquakes,” *Division of Earth Science*, GeoForschungsZentrum, Potsdam, Germany, November 10, 2014.

“Friction Mechanics, Onset of Sliding, and Laboratory Earthquakes,” *Department of Earth Sciences*, Free University of Berlin, Berlin Germany, November 10, 2014.

“Friction Mechanics, Onset of Sliding, and Laboratory Earthquakes,” *Special earth Science Lecture*, Technical University of Munich and Emperor Maximillian University, Munich, Germany, November 6, 2014

“Friction Mechanics, Onset of Sliding, and Laboratory Earthquakes,” *Institute of Advanced Studies*, Technical University of Munich, Munich Germany, November 6, 2015

“Friction Mechanics, Onset of Sliding, and Laboratory Earthquakes,” *Earth Sciences Invited Lecture,* Ben Gurion University, Beershiva, Israel, November 4, 2014

“Wireless in the Woods,” *Department of Civil Engineering*, Cambridge University, Cambridge England, October 30, 2014.

“Friction Mechanics, Onset of Sliding, and Laboratory Earthquakes,” *Earth Science Invited Lecture*, Eidgenössische Technische Hochschule, Zurich, Switzerland, 27 October, 2014

“Wireless Sensor Networks for Snow Hydrology,” Eidgenössische Technische Hochschule, Zurich, Switzerland, October 21, 2014.

“Wireless in the Woods,” *2nd International Smart Infrastructure Symposium, Osaka, Japan*, September 26, 2014.

“Wireless in the Woods,” *Universidad Católica de Chile*, Santiago, Chile, January 14, 2014.

“Wireless Sensor Networks for Snow Hydrology,” *Centre for Energy Advancement through Technological Innovation Symposium on Hydroelectric Power, San Diego, CA, November 14, 2013.*

 “Nano-Seismology and Laboratory Earthquakes,” California Institute of Technology Seismology Laboratory, February 17, 2012, Pasadena, CA

“From Earthquakes to Acoustic Emissions: Non-Destructive Testing and Civil Engineering,” *NDTMS-2011 International Symposium on Nondestructive Testing of Materials and Structures*, May 15-18, 2011, Istanbul, Turkey

“Absolute Calibration of an Acoustic Emission Sensor,” *NDTMS-2011 International Symposium on Nondestructive Testing of Materials and Structures,* May 15-18, 2011, Istanbul, Turkey

“Intelligent Infrastructure for Improving the Public Well-Being,” *Hong Kong Polytechnic University*, August, 20, 2010.

“Dynamic Measurements and Response Control for Some Natural Hazards,” *International workshop of Technology and Management for Emergency Response*, Institute for Information Industry, Taipei, Taiwan, 20 - 22 December, 2009

“Transparent Earth Imaging Team,” *DUSEL S-4 Kick-Off Workshop*, Lead, SD, 1 - 3 October, 2009.

“Calibration of High-fidelity piezoelectric nanoseismic transducers, leading to a study of Hertzian impact and fundamental friction,” *Department of Civil and environmental Engineering*, McGill University, Montreal 28 July, 2009.

“Intelligent Structural Health Monitoring Systems,” *Institute of Industrial Science,* the University of Tokyo, 28 May, 2009

“Improving the Public Well-Being,” *Berkeley-Siemens Research Center Kick-Off meeting*, UC Berkeley, 9 April, 2009.

“Nanoseismic Investigation of the Mechanisms of Friction,” *Mezzo-Scale Shear Physics in Earthquake and Landslide Mechanics*, Batsheva Seminar, 25-30 January 2009, EinGedi, Israel

“Adaptive multi-level virtual-controller interactive physical information system - AdapSys,” *FIMECC Ltd.*, Helsinki, Finland, 18 January, 2009.

“Sensors for Intelligent Infrastructure,” *VTT-Micronova,* Espoo, Finland, 17 January, 2009.

“Intelligent Infrastructure,” *VTT-Industrial Control Laboratory*, Oulu, Finland, 16 January, 2009.

“Intelligent Infrastructure: Clean Energy and Environment,” *Tienjin University Workshop on Energy and Environment*, Tienjin, China, 12 January 2009.

General Chair, *Fifth International Conference on Networked Sensing Systems, SICE/IEEE Sensors Council*, Kanazawa Institute of Technology, 13 ~ 15 June 2008.

“Intelligent Infrastructure,” Keynote, *KTH; Stockholm, EU-US Workshop on Networked Information and Control Systems*, 18 June, 2008

“Health Monitoring,” Cambridge University.  *ESF-NSF Workshop Proposal: Sensor Networks for Civil Infrastructure Systems*, 28 April, 2008

“Transparent Earth,” *DUSEL-NSF Planning Workshop*, Lead, S.D., 21 April, 2008

“Improving the Public Well-Being,” *Siemens-UC Berkeley Strategic Partnership Centre for Knowledge Interchange Workshop*, 9 April, 2008

“Comprehensive Wireless Monitoring and Control of StatoilHydro's Integrated Infrastructure,” *Executive Visit by StatoilHydro to UC-Berkeley*, 6 March, 2008

“Post Earthquake Stability of the Folsom Dam,” *U.S. Bureau of Reclamation, Sacramento Region*, 28 January, 2008.

“Using Sensors,” *Dalian University of Technology*, 6 January, 2008

“Monitoring Multiscale Vibration,” *Dalian University of Technology*, 7 January, 2008

“Acoustic Emission: Scale, Sources and Sensors,” *Harbin Institute of Technology*, 5 January, 2008

“Using Sensors,” *Harbin Institute of Technology*, 4 January, 2008

“Friction,” *Harbin Institute of Technology*, 4 January, 2008

“Improving the Public Well-Being,” *UC-Berkeley Technical Workshop for TEKES Technical Research Executives*, 10 October, 2007

“Instrumentation and Synergy,” *DUSEL Town Meeting*, Washington, D.C., 18 November, 2007

“World Forum on Smart Materials and Smart Structures Technology, Chongqing, China, 23 May, 2007

“Wireless Sensor Networks for Civil Engineering,” *Wuhan University of Science and Technology*, 9 December, 2006

“Acoustic Emission, Sources, and Friction,” *Wuhan University of Science and Technology*, 10 December, 2006

“Wireless Sensor Networks for Civil Engineering,” *Wuhan University of Science and Technology*, 10 December, 2006.

“System Identification of Soil Behavior from Vertical Seismic Arrays,” US - Taiwan Workshop on Smart Sensor Technology for Structural Health Monitoring, 15 October, 2006, Taipei, Taiwan

“System Identification of Earthquake Ground Motions,” *US-Taiwan Workshop on Smart Structural Technology for Seismic Hazard Mitigation,* 14 October, 2006, Taipei, Taiwan.

“Sensors for Structures,” *VTT SmartSpace Project Wrap-Up Workshop*, 1 December, 2006, Helsinki, Finland.

“Environmental Sensors for Infrastructure Condition Monitoring,” *CITRIS in Japan Workshop*, 10 April, 2006, Tokyo, Japan

“New Sensor Applications for Civil Infrastructure,” *JapanRail Research Center*, 11 April, 2006, Tokyo, Japan.

"Sensors for Civil Engineering," *Contractor's workshop: New Sensor Applications for Civil Infrastructure*, 13 April, 2006, Tokyo Japan.

"Sensors for Tunnels,” *VTT Infra Project Wrap-Up Workshop*, 2 March, 2006, Helsinki, Finland.

"Environmental Sensors for Infrastructure Condition Monitoring," *CITRIS in Finland Workshop*, 20 June, 2006, Helsinki, Finland.

“Fracture and Friction,” *Ben-Gurion University*, 9 January, 2006, BeerShiva, Israel.

“New Sensor Applications for Civil Infrastructure,” *Keio University*, 11 April, 2006, Tokyo, Japan.

“Geophysical and GeoEngineering Monitoring,” *HomestakeDusel Workshop*, 10 February, 2006, Lead, SD.

"Fracture and Friction," *Central Research Institute of the Electric Power Industry*, Japan, 12 April, 2006, Tokyo, Japan.

“New Sensor Technologies for Tunneling,” *Mitsui-Sumatomo Construction Company*, 12 April, 2006, Tokyo, Japan.

"Acoustic Emissions: Sources and Sensors," keynote speech, *Richard Goodman Honorary Symposium*, 14 January, 2006, Berkeley, CA.

"Sensor Networks for Construction," keynote speech, *Workshop on New Sensors for the Construction Industry,* Tokyo, Japan, 14, November, 2005.

“Advanced Monitoring Systems”, *Nissan Motors Research Center*, Atsugi-shi, Japan, 7 June, 2005.

“Advanced Sensors for Civil Engineers,” *Central Research Institute of the Electrical Power Industry,* Abiko, Japan 6 June, 2005.

“Advanced Sensors for Monitoring Our Environment”, *keynote speech, 1st International Symposium on Advanced Technology of Vibration and Sound*, Miyajima, Japan, 1-3, June

"A New Look at Acoustic Emissions," *InstitutfuerWerkstoffeimBauwesen*, Universitaet Stuttgart, Jan. 11, 2005

“New Sensors for Civil Engineering,” *Taisei Construction Research Institute*, Oct. 24, 2005.

“Advanced Sensors and Civil Engineering,” *Graduate School of the Chinese Academy of Science*, Beijing, Oct. 20, 2005

“Practical Sensor Systems for Civil Engineering,” *Construction Industry Institute Annual Convention*, Vancouver, July 28, 2004

“Some New Applications of Embedded Sensors for Civil Engineering,” U*niversity of Tokyo*, Dept. of Civil Engineering, June 30, 2004.

“A Simplified Approach to Sensor Networks for Civil Applications,” *VTT Building and Transport*, Helsinki, Finland, May 28, 2004; workshop "New Technologies in the Management of Underground Infrastructure"

“New Sensor Technologies for Monitoring the Civil Systems,” Fiatech Web Conference on Smart Chips, Feb. 25, 2004

"New Sensors for Civil Engineering," Faculty of Engineering, *The Technion*, Haifa, Israel, June 17, 2003

"Intelligent Wireless Sensor Networks," *Geophysical Institute of Israel*, Lod, June 15, 2003

"Acoustic Emission - are we measuring what we think we are?" *Geological Survey of Israel*, June 10, 2003

"Acoustic Emission Sources and Sensors," given for the short course Rock Stress and Its Measurement, Professor Ove Stephansson, May 14, 2003, *GeoForschungs Zentrum,* Potsdam, Germany

"New Sensor Technologies for Civil Engineering," *Institut fuer Werkstoffe im Bauwesen*, Universitaet Stuttgart, May 8, 2003

"Experimental Greens Functions for Reliable Estimation of Earthquake Ground Motions," *Institut fuer Werkstoffe im Bauwesen*, Universitaet Stuttgart, May 6, 2003

"Application of Advanced Sensor Technologies to Civil Engineering, " *Dept. of Structural Engineering, UCSD*, April 7, 2003

“Cheap and Easy Structural Health Prognostication,” *CAL IT2 Invited Lecture*, UCI, Dec. 4, 2002.

"Future Sensing Systems," *Earth Sciences Division, LBNL*, Nov. 22, 2002

"Enhanced Geothermal Systems," *Committee on Earth Resources* NRC, Reno, NV, September 26 and 27, 2002

“Intelligent Wireless Sensor Networks for Historic Monument Preservation,” *DunhuangAcadamy*, Dunhuang, China, 14 June, 2002.

“Natural Hazard Mitigation,” *Graduate School of Engineering*, Osaka University, 9 June, 2002.

"Disaster Risk Reduction," New Directions in Technology, *UC Berkeley in Silicon Valley*, 1 June, 2002, San Jose.

"Civil Engineering Testbeds," *CITRIS Kick-Off Meeting*, 18 Sept., 2001, UCB.

“Structural Health Monitoring,” *Department of Civil Engineering, Osaka University*, Japan, 26 May, 2001.

“Civil Engineering and Information Technology - Integration of Ubiquitous Intelligent Wireless Sensor Nodes,” *CEE Alumni Seminar*, March, 2001.

“Plenery Speaker, “MEMS Digital Accelerometers,” *NSF Workshop on Exploring the Uses of Autoadaptive Media in Geotechnical Earthquake Engineering*, Austin, Jan. 10-12, 2001

“Modeling Vertical Array Data Using System Identification,” *SCEC/ROSRINE Workshop on Borehole Array Data Utilization*, Palm Springs, CA, 16 Dec., 2000.

“Estimating Site Properties from Earthquake Motion,” *The Jerzy Neyman Seminar,* 15 Sept., 1999, Statistics Dept. UC Berkeley.

“Interpretation of Seismic Events Large and Small,” *Dept. of Civil Engineering, Ga. Inst. Of Tech.*, August, 1999.

“State-of-the-Art, Rock Physics,” *7th U.S. National Rock Mechanics Symposium*, Vail, CO, 8 June, 1999

“Role of Industry, Government, and Academia in Rock Mechanics Research,” *1999 ARMA Forum*, Pacific Grove, CA, 27 Oct., 1999

“Applications of Quantitative Acoustic Emission,” *Geophysics Dept*., Stanford Univ., Feb., 1999

“Repeatability of Ground Motions,” *PG&E, Workshops on PEER/PG&E Funded Research*, Aug., 1998.

“Using Parametric Modeling to Predict Ground Motions,” *Berkeley Seismological Station*, Nov., 1998

“Repeatability of Ground Motion Estimates,” *PG&E, Workshops on PEER/PG&E Funded Research*, May, 1998

“Application of System Identification to Vertical Seismic Arrays,” *Berkeley Industrial Liaison Program*, March, 1998.

“Active Imaging of Microfractures in Rock,” *Earth Resources Center*, Univ. CA, Berkeley, Feb., 1998.

Invited participant, S*tructured Academic Review of Hot Dry Rock/Hot Wet Rock, and MTC Meeting*, Tohoku University, 14 - 18 March, 1997, Sendai, Japan.

“Application of System Identification to Quantifying Ground Motion,” *U.S. Geological Survey*, 11 Sept., 1997, Palo Alto, CA.

“New Communications Technology,” *Workshop on Bridging the Gap Between Science and Practice in Rock Mechanics and Rock Engineering*, Montreal, QE, 22 June, 1996. U.S. National Committee for Rock Mechanics, NAS/NRC.

**2. Service as editor or reviewer for scholarly journals**

Member, International advisory committee, Sensing and Instrumentation for Infrastructure Monitoring (Taylor and Francis)

Editorial Board Member, The Open Acoustics Journal

Editorial Board Member, ASCE Journal of Geotechnical Engineering

Editorial Board Member, ASCE Journal of Infrastructure Systems

Reviewer, MacArthur Fellow Program

Outstanding Reviewer, International Journal of Rock Mechanics

Reviewer, ASCE Journal of Geotechnical Engineering

Reviewer, ASCE Materials Journal

Reviewer, ASCE Press

Reviewer, ASTM Geotechnical Testing Journal

Reviewer, Bulletin of the Seismological Society of America

Reviewer, Journal of Applied Remote Sensing

Reviewer, Chaos

Reviewer, Earth and Planetary Science Letters

Reviewer, Geophysical Research Letters

Reviewer, Geophysics

Reviewer, Nanotechnology

Reviewer, European Journal of Soil Science

Reviewer, IEEE Transactions on Geoscience and Remote Sensing

Reviewer, Integration, the VLSI journal

Reviewer, Journal of Applied Mechanics

Reviewer, Journal of Geophysical Research

Reviewer, Journal of Nanoengineering and Nanosystems

Reviewer, Journal of Sound and Vibration

Reviewer, NDT & E International

Reviewer, Nanotechnology

Reviewer, Mechanics Research Communications

Reviewer, Nuclear Engineering and Design

Reviewer, Optics and Lasers in Engineering

Reviewer, Oxford University Press

Reviewer, PAGEOPH (Journal of Pure and Applied Geophysics)

Reviewer, Rock Mechanics and Rock Engineering

Reviewer, Transportation Research Board

Reviewer, Ultrasonics

**3. Service to scholarly or professional societies**

*Organizer,* 2017 U.S. National Symposium on Rock Mechanics, ARMA, San Francisco, June 2017

*Nominator and Reviewer,* MacArthur Fellows Program

*International Scientific Committee,* International Symposium on Nondestructive Testing of Materials and Structures, May 2011, Istanbul.

*International Advisory Committee*, 3rd Canada – US Rock Mechanics Symposium, May, 2009, Toronto.

*International Scientific and Advisory Committee* First International Conference on Concrete Repair, Rehabilitation and Retrofitting, Cape Town, S.A.

*International Scientific and Advisory Committee* Advances in Construction Materials Symposium in honor of Hans W. Reinhardt, University of Stuttgart

*Program Committee* SPIE 2012 Sensors and Smart Structures Technologies for Civil, Mechanical and Aerospace Systems

*Program Committee* SPIE 2011 Sensors and Smart Structures Technologies for Civil, Mechanical and Aerospace Systems

*Program Committee* SPIE 2010 Sensors and Smart Structures Technologies for Civil, Mechanical and Aerospace Systems

*Program Committee* SPIE 2009 Sensors and Smart Structures Technologies for Civil, Mechanical and Aerospace Systems

*Program Committee* SPIE 2008 Sensors and Smart Structures Technologies for Civil, Mechanical and Aerospace Systems

*Program Committee* SPIE 2007 Sensors and Smart Structures Technologies for Civil, Mechanical and Aerospace Systems

*Program Committee* SPIE 2006 Sensors and Smart Structures Technologies for Civil, Mechanical and Aerospace Systems

*Program Committee* SPIE 2005 Sensors and Smart Structures Technologies for Civil, Mechanical and Aerospace Systems

*Organizing Committee* 11th International Conference on Soil Dynamics & Earthquake Engineering - 3rd International Conference on Earthquake Geotechnical Engineering

*Program Committee* SPIE 2004 Sensors and Smart Structures Technologies for Civil, Mechanical and Aerospace Systems

*Chair,* National Workshop for Future Sensing Systems, NSF/DARPA, Tahoe, CA, 24-26, August, 2002

*Secretary and member*, Founding Board of Directors, American Rock Mechanics Association

*Chair,* ASCE Committee on Rock Mechanics

*Member and former Vice-Chair*: ASCE Geophysics Committee.

*Organizer*: 1999 ARMA Forum, Pacific Grove, CA, Oct., 1999.

*Member,* National Advisory Committee, *37th U.S. Symposium for Rock Mechanics*, Vail, CO, June, 1999.

*Member,* International Advisory Committee, *4th North-American Rock Mechanics* Symposium, Seattle, Aug., 2000.

 **4. Service to educational or governmental agencies**

 **Advising**

Consultant, Tunnel Detection Assessment, U.S. Department of Homeland Security, 2010.

Member, San Francisco Public Utilities Commission Geothermal Advisory Panel, 2007 - 2008.

Invited participant, NAE Japan-American Frontiers of Engineering, 2002

U.S. chair, Large-Scale Civil Systems Session, NAE Japan-American Frontiers of Engineering, 2003

Member, NAE Committee on Geological and Geotechnical Engineering in the New Millennium: Opportunities for Research and Technological Innovation, 2003-2004.

 **Proposal Review**

Reviewer - US Civilian Research and Development Foundation.

Services Fédérauxdes Affaires Scientifiques, Techniques et Culturelles, Belgium

Reviewer, France-Berkeley Fund.

Reviewer, ITS Large Program, National Science Foundation.

Reviewer, Geotechnical Engineering and Materials, National Science Foundation.

Reviewer, Earth Science Program, National Science Foundation.

Reviewer, Engineering and Physical Sciences Research Council, U.K.

Reviewer, Oak Ridge Associated Universities/ Research Council of Kazakhstan.

Reviewer, California PATH PEER Review for Innovative Topics

Member, chartered panels, IIA, RIG, and SBIR programs, Geomechanical, Geotechnical, Geoenvironmental Systems, National Science Foundation.

Member, chartered panel for Knowledge and Distributed Intelligence, National Science Foundation.

Member, Reverse Site Visit and final panel, Institute for Civil Infrastructure Systems, National Science Foundation.

Member, chartered panel for Advanced Sensors for Power Systems and Extended Infrastructure, National Science Foundation and EPRI.

Reviewer, Science and Technology Center in Ukraine, U.S. Dept. of State/NSF.

Reviewer, State of Louisiana Board of Regents.

Reviewer, U.S. Department of Energy.

Reviewer, U.S. Department of Commerce, Advanced Technology Program.

Reviewer, ITS Technology Transfer Program, University of California, Berkeley.

 **5. Service in professional, managerial, or technical assistance to clients, private corporations, nonprofit organizations, or various levels of governmental agencies**

*Founding Partner*, Metronome Systems, Berkeley, CA

*Technical Advisor*, FLARE Labs, Durham, NC

*Technical Advisor*, Shinkawa Sensor Technology, Tokyo, Japan

*Technical Advisor,* GreenSHM Systems, Palo Alto, CA

*Technical Advisor:* Dust Networks, Hayward, CA

*Technical Advisory Board Member:* SECA-FLAIR, Durham, NC

*Technical Advisory Board Member:* Marathon Products Inc., Oakland, CA

*Technical Advisory Board Member:* Senera Inc., Boston, MA

*Technical advisor*, Mayor's Millennium Committee, City of Berkeley

*Consultant,* TerraTek, Salt Lake City, UT

*Consultant*, Crossbow Inc., San Jose, CA

*Consultant*: develogic GmbH, Gerlingen, Germany

*Consultant*: Sutter and Enslein, attorneys at law, Washington, D.C.

*Consultant*: Stone and Webster Co.

**Extramural Funding Since 2000**

“SHRIMP: Smart Harbor Implementation,” France-Berkeley Fund, 7/1/16 – 6/31/17, $12,000, co-PI.

 “REALMS, Real-Time Real-World Monitoring Systems,” Inria-Paris, $36,000, 6/15 – 6/18, co-PI.

“Injection Induced Seismicity in Hot Reservoirs, NSF, 6/15 – 5/18, $361,064, PI.

“Developing Analytical Tools and Technologies to Improve Water-Energy Management: Improved Hydrological Forecasting for Hydropower Generation,” California Energy Commission, 6/15 – 1/19, $1,120,000, PI.

“Equipment Grant for Improved Hydrological Forecasting for Hydropower Generation,” California Department of Water Resources, 6/15 – 1/19, $150,000, PI.

“Southern Sierras Critical Zone Observatory,” NSF, 9/13 – 8/18, $340,728, Co-PI.

“MRI: Development of a basin-scale water-balance instrument cluster for hydrologic, atmospheric and ecosystem science,” NSF, Principle Co-PI, P.I. Roger Bales (UC Merced), Co-PIs Martha Conklin (UC Merced), Danny Marks (U.S.D.A. Agricultural Research Service), Robert Rice (UC Merced), 07/11 – 06/14, $1,995,156.

“A Laboratory study of Induced Seismicity Due To Fluid Injection - Application to the Geysers Geothermal Field,” NSF, 08/2011 - 07/2014, $370,231

 “SuperCritical CO2 as a Heat Transmission Fluid for Enhanced Geothermal System,” Lawrence Berkeley National Laboratory, 01/2010 - 12/2011, $143,418

“Modeling absolute displacements of the human body to quantify diagnoses of neuropathology,” Berkeley – France Foundation, Co-PI with Terence Bayen, 6/10 – 5/11, $9,800.

“Center for Sierra Nevada Water Information System,” CITRIS Seed Grant. Co-PI with Roger Bales,5/10 – 4/11, $74,903.

“SuperCritical CO2 as a Heat Transmission Fluid for Enhanced Geothermal Systems,” Lawrence Berkeley National Laboratory, $78,870, 4/10 - 12/10

“SuperCritical CO2 as a Heat Transmission Fluid for Enhanced Geothermal Systems,” Lawrence Berkeley National Laboratory, $160,000, 1/10 - 12/10

“ClearSky,” Nokia Corp, Co-PI with Alexandre Bayen and Edmund Seto, $300,000, 1/10 - 1/12

“iShake,” USGS, Co-PI with Jonathan Bray and Alexandre Bayen, 1/10 - 1/11, $98,000.

“Subsurface Imaging and Instrumentation, DUSEL S4,” NSF, 9/09 – 8/2012, $234,798.

“Forest Hydrology,” U.S. Forest Service, 9/08 – 9/12, $20,000.

“Southern Sierras Critical Zone Observatory,” NSF, 9/08 – 8/12, $240,728, Co-PI.

“Quantitative Diagnosis of Neurological Diseases,” CITRIS seed grant, 1/08 - 6/09, $50,000

“Collaborative Research: Towards a Transparent Earth,” NSF, PI, with L. Johnson and W. Roggenthen, 9/07 – 8/11, $371,498.

“A New Family of Acoustic Emission Sensors for Damage Source Identification,” NSF, 9/06 – 8/10, $259,796.

“MINT: Micro Inertial Navigation Technology,” DARPA/Analog Devices Inc., 1/09 – 8/09, $153,341, Co-PI.

“Determination of Time Dependent Behavior and Seismic Response of Jointed Rock Masses Using Wireless Monitoring in the Field, Numerical Analysis, and Rock Mechanics Laboratory Tests,” Bi-National Science Foundation, PI, with Y.F. Hatzor, 9/05 – 2/10, $200,000.

“An Unconstrained Sliding Friction Model and an Application to the Folsom Dam,” NSF, PI, with Richard Goodman, 4/04 - 4/07, $301,281, with REU.

“Intelligent Sensor Motes for Vertical Seismic Arrays,” NSF, 6/15/03 – 5/31/06, $347,305.

 “Large-Scale Streaming Potential Tomography Laboratory Experiments to Determine Enhanced Geothermal System Response to Water Injection,” INEEL, 4/3/03 – 4/30/04, $69,993.

“National Workshop on Future Sensing Systems,” NSF, PI, with K. Pister, 7/1/02 – 12/31/03, $111,708.

“ITR/IM: Adaptive Real-Time Geoscience and Environmental Data Analysis, Modeling and Visualization.” NSF, Nicholas Sitar, George H. Brimhall, John Radke, Steven D. Glaser, 10/01/01 - 08/31/04., $1.5 million

“Advanced MEMS Sensors for Civil Engineering Applications,” NSF SGER, PI, with N. Sitar, 2001, $80,000.

**New courses devised and instituted**

CE 171 Introduction to Geological Engineering

CE 171 Rock Mechanics

CE 186 Design of Cyber-Physical Systems

CE 271 Sensors and Signal Interpretation

**Graduate students**

**Current Students**

Sami Malek, Ph.D. expected 2018, *Intelligent Water Information Systems for Optimizing Hydroelectric Generation*

Tessa Maurer, Ph.D. expected 2020, *Modeling Catchment Water Balance Using Real-Time Data.*

Jessica Parker, Ph.D. expected in 2020, *Injection Induced Seismicity.*

Zeshi Zheng, Ph.D. expected in 2018, *Water Security and Sustainability*.

**Graduated Students**

Laurie Gaskins Baise, Ph.D. Dec., 2001, *Effects of Local Geological Structure on Earthquake Response*; **Professor**, Tufts University, NSF CAREER award, ASCE Cassagrande award.

Dagun Bakun Mazor, Ph.D. November 2012, Ben Gurion University of the Negev, *Modeling Dynamic Rock Mass Deformation with the Numerical DDA Method*; **Assistant Professor**, Ben Gurion University.

Jian-Ye Ching, Ph.D. July, 2002, *Application of System Identification to a Variety of Civil Engineering Dynamic Systems*; George W. Housner Research Fellow, California Institute of Technology; **Professor**, National Taiwan University.

Dom Galic, Ph.D. May, 2008, *An Unconstrained Sliding Friction Model and an Application to the Folsom Dam*; **Senior** **Research Engineer**, United States Bureau of Reclamation.

MiKyong Hand, M.S., January 1997, *Active Imaging of Rock Fractures with Ultrasonic Reflection and Seismic Migration* (Colorado School of Mines); **Physician**, Colo. Health Sciences Center.

Branko Kerkez, Ph.D. December, 2012, *Wireless Sensor Networks and the Water Balance in the Sierra Nevada;* **Assistant Professor,** University of Michigan.

Mario Magliocco, Ph.D. 2014, *Experimental Investigation of Using Supercritical CO2 in Enhanced Geothermal Systems*; **Post-Doctoral Scientist**, Lawrence Berkeley National Lab.

Greg McLaskey, Ph.D. May, 2011, *Waveform Analysis of Acoustic Emission and Sensor Development for Multi-Scale Friction Testing;* **Assistant Professor, Cornell University.**

Jeffrey R. Moore, Ph.D. May, 2007, *Application of the Self-Potential Method in Hydrogeology*; **Assistant Professor,** University of Utah.

Carlos Oroza, Ph.D. May, 2017, *Wireless Sensor Networks and the Water Balance in the Sierra Nevada***; Post-Doctoral Fellow***, UCB*

Paul Selvadurai,Ph.D. December, 2015, *Nano-Seismology and Earthquake Rupture Nucleation*; **Post-Doctoral Fellow**, ETH.

Chris Sherman, Ph.D., Aug. 2014, *Transparent Earth - Installation and Operation of the Seismic Observatory at the DUSEL at Homestake Mine*; **Research Scientist**, Lawrence Livermore National Laboratory.

Albert To, Ph.D. Sept., 2005*, Multi-Scale Experimental Investigation of Sliding Friction;* **Associate Professor**, University of Pittsburgh.

Greg Weiss, M.S., April 1996, *Development of an Embedded, Wideband Acoustic Emission Sensor* (Colorado School of Mines); **Senior Engineer**, Applied Research Associates, Littleton, CO.

Ying Zhang, Ph.D. August 2006, *MEMS/NEMS Design Automation and Synthesis;* **Professor**, School of Electrical and Computer Engineering, Georgia Institute of Technology; NSF CAREER Award.

Ziran Zhang, Ph.D. December 2016, *Wireless Sensor Networks and Cyber-Physical Water Information Systems for the Sierra Nevada.* **Post-Doctoral Fellow**, Inria-Pari*s*