

Amr Elnashai

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#### Current Positions

- Harold and Inge Marcus Dean, College of Engineering, Penn State
- Emeritus Professor, University of Illinois at Urbana-Champaign

## CAREER SUMMARY

Fellow of the British Royal Academy of Engineering Amr Elnashai is the Dean of Engineering at the Pennsylvania State University, and the Harold and Inge Marcus Endowed Chair of Engineering. As dean, Amr is responsible for all aspects of operation and leadership of the College of Engineering, with 11,000 students, 300 professors, 400 staff, \$240M total budget, \$137M research expenditure, over \$210M endowment, 12 departments, 2 institutes and 20 research centers. He is member of the Academic Leadership Council and chairs the university Committee on Inclusive Penn State. Amr served as the chair of one of five Penn State research thrusts development committees, focused on Managing Resources. During his time as dean, Amr initiated a one-year MS and MEng program comprising 16 disciplinary and interdisciplinary degrees that are transforming the profile of the college and significantly expanding its graduate student population. He has targeted biomedical and mechanical engineering for growth and secured 22 new faculty lines between the two departments. He also raised resources from the Provost and other partners to expand the faculty by over 20%. He created, with the heads, associate/assistant deans, and directors, a strategy and an implementation plan, a five-year hiring plan for faculty, staff and development of infrastructure, a strategy for inclusion, created a Communications office and two offices of Associate Dean for Research and Associate Dean for Innovation. He also started an office of Corporate Research and Philanthropy, and an office of Data and Assessment. He hired 45 professors since he joined Penn State, many are joint appointments with life sciences, ethics, agricultural science, medicine, and materials research institutes and colleges. He also hired 4 associate deans, 4 department heads and a center director who is a member of the National Academy of Engineering.

He was previously head of the Department of Civil and Environmental Engineering at the University of Illinois at Urbana-Champaign (June 2009 to December 2013) and the Bill and Elaine Hall endowed professor. During his tenure as department head, research expenditure increased by 30% and graduate tuition income increased by more than 500%. He created three interdisciplinary majors, minors, MS and PhD programs that have attracted large percentages of students. He was Director of the NSF multi-institution interdisciplinary Engineering Research Center (ERC), MAE Center (2004-2009). He was also Director of the NSF Network for Earthquake Engineering Simulations (NEES) Laboratory at Illinois (2002-2009). His total research expenditure during his 13 years at Illinois was in excess of \$20M. He was the professor with the highest research expenditure in this top-ranked department for 4 consecutive years (2006-2009).

Amr obtained his Bachelor of Science degree from Cairo University (1977), followed by MSc and PhD degrees from Imperial College (1980, 1984), University of London. Before joining the University of Illinois in June 2001, Amr was Professor of Earthquake Engineering and Head of Division at Imperial College (1985-2001). He was Visiting Professor at the University of Surrey, UK (1997-2014). Other visiting professor appointments include the University of Tokyo, the University of Southern California, and the European School for Advanced Studies in Reduction of Seismic Risk, Italy.

He is founder and editor-in-chief of the Journal of Earthquake Engineering (Taylor and Francis, SCI-expanded) and editorial board member of several other journals, a member of the drafting panel of the European design codes, past chair of the UK earthquake engineering association, UK delegate to and past senior Vice-President of the European Association of Earthquake Engineering and a member of the Council of the UK Institution of Structural Engineers (ISE; 2013-2015). He serves the ISE as 'US Education Ambassador'. He is the winner of the Imperial College Unwin Prize for the best PhD thesis in Civil and Mechanical Engineering (1984), the Oscar Faber Medal for best paper in the Institution of Structural Engineers, and two best paper medals from the International Association of Tall Buildings, Los Angeles.

Amr's research interests are multi-resolution distributed analytical simulations, network analysis under stress and disruption, large-scale fire ignition and spread modeling, hybrid testing and field investigations of the response of complex networks and structures to earthquakes. He is currently the sole advisor of one PhD student at Penn State and serves on the PhD committee of another student at Illinois. He has produced more than 250 research publications, comprising 146 refereed journal papers and many conference papers, keynote and prestige lectures, research reports, 3 books and several book chapters, magazine articles and earthquake investigation reports. His Google-based H-index is 41, with 7760 citations. His highest downloaded publication is his report to FEMA/DHS on impact of earthquakes on the central USA, with 51,813 unique downloads from the Illinois digital database (IDEALS). Amr has supervised 46 Doctoral and over 100 Master of Science theses. Many of his students hold significant positions in industry, academia and government around the world.

# COLLEGE OF ENGINEERING BIOGRAPHICAL DATA

## The Pennsylvania State University

**Department (% appnt):** Civil and Environmental Engineering (zero %) **Date:** January 6, 2014

**Name:** Elnashai, Amr S. **Birth Date:** 5/8/1954 **Citizenship:** USA/Britain/Egypt

**Present Academic Rank:** Professor

**Tenure Status:** Indefinite Tenure

**Administrative Title:** Dean of the College of Engineering  
Harold and Inge Marcus Endowed Chair

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### Degrees

1. BSc, Distinction, Cairo University (Cairo, Egypt), July 1977, Civil Engineering
2. MSc, Distinction, Imperial College (London, UK), August 1980, Concrete Structures and Technology
3. DIC, Imperial College (London, UK), August 1980
4. Ph.D., Imperial College (London, UK), July 1984, Unwin Prize - Best PhD in Civil and Mechanical Engineering

### Academic Positions

1. Dean of Engineering, January 2014 to present
2. Head, Department of Civil and Environmental Engineering, University of Illinois at Urbana-Champaign, June 2009 to December 2013
3. Director of Hybrid Simulation, NEES@Illinois Simulation Facility, June 2009 to December 2013
4. Consultant, Mid-America Earthquake (MAE) Center, June 2009 to present
5. Director, College of Engineering, Council on Global Engineering Initiatives, June 2008 to October 2010
6. Director, Mid-America Earthquake (MAE) Center, April 2004 to June 2009
7. Director, NEES@Illinois Simulation Facility, September 2003 to June 2009
8. Acting Director of the Mid-America Earthquake (MAE) Center, September 2003 to April 2004
9. Professor of Structural Engineering, Department OF Civil and Environmental Engineering, University of Illinois at Urbana-Champaign, June 2001 to Present (adjunct since December 2013)
10. Associate Director of the Mid-America Earthquake (MAE) Center, June 2001 to September 2003
11. Visiting Professor, Civil and Environmental Engineering Department, University of Surrey, United Kingdom, April 1995 to October 2014
12. Head of Engineering Seismology and Earthquake Engineering Division, Civil Engineering Department, Imperial College, September 1994 to June 2001
13. MS Course Director, Civil Engineering Department, Imperial College, September 1987 to June 2001
14. Lecturer, Reader then Professor of Earthquake Engineering, Civil Engineering Department, Imperial College, January 1985 to June 2001
15. Research Assistant, Civil Engineering Department, Imperial College, October 1980 to June 1984
16. Structural Engineering, Cairo University, Instructor (faculty) in Structural Analysis and Mechanics, September 1977 to July 1979

### Professional Activities

#### Professional (non-academic) Employment

1. Senior Consultant – EQE International Limited, Warrington, UK, June 1996 to July 2001
2. Senior Engineer – Technical Development Section, Wimpey Offshore, July 1984 to November 1985
3. Design Engineer – Bridge Design Section, Arab Consultants, Cairo, Egypt, February 1978 to May 1979

### Consulting Activities

Major worldwide consulting, working for multinational corporations including Shell International, GSK (previously GlaxoWellcome), Nuclear Installations Inspectorate, British Airports Authority, World Bank, others. List available upon request.

### Professional Associations

1. Fellow, Royal Academy of Engineering, UK, 2000
2. Fellow, American Society of Civil Engineers, 1989
3. Fellow, Institution of Structural Engineers, UK, 1989
4. Member, British Computer Society, UK, 1984-1993

### Honors, Recognition, and Academic Achievements

#### Professorship and Chairs

Award Name	Institution	Date Awarded
Harold and Inge Marcus Endowed Chair	The Pennsylvania State University, USA	2014
William and Elaine Hall Endowed Professorship	Department of Civil and Environmental Engineering, University of Illinois, USA	2007
Donald Biggar Willett Professorship	College of Engineering, University of Illinois, USA	2003
Personal Chair in Earthquake Engineering	Imperial College London, UK	1991

#### Instruction

Award Name	Institution	Date Awarded
List of Teachers Ranked as Excellent by their Students	University of Illinois at Urbana-Champaign	2007
List of Teachers Ranked as Excellent by their Students	University of Illinois at Urbana-Champaign	2005

#### Research

Award Name/Organization	Title	Date Awarded
Outstanding 2002 Journal Paper awarded by Los Angeles Tall Buildings Structural Design Council	Overstrength and Force Reduction Factors of Multi-storey R/C Buildings, Mwafy, A. and Elnashai, A.S., Vol. 11, pp. 329-351.	2003
Outstanding 1999 Journal Paper awarded by Los Angeles Tall Buildings Structural Design Council	Structural performance and economics of tall high strength RC buildings in seismic regions, Laogan, B.T. and Elnashai, A.S., The Structural Design of Tall Buildings, Vol. 8, No. 3.	1999

Award Name/Organization	Title	Date Awarded
Oscar Faber Best Paper Medal	Earthquake-resistant Composite Structures, Elnashai, Broderick and Dowling, The Institution of Structural Engineers Journal, vo. 73. pp121-132	1995
Armstrong Medal for Best PhD Thesis in Civil and Mechanical Engineering	Composite Tubular Connections for Offshore Applications	1985

## Resident Instruction, Continuing Education and PhD Committees

### Resident Instruction

1. Earthquake Engineering (Grad, 4 credits, 2003-2013)
2. Earthquake-resistant design and analysis (Grad, 33 hours and field trip, 1987 - 2001)
3. Introduction to Structural Dynamics (UG and Grad, 4 credits, Fall, 2002)
4. Campus Honors Course in Earthquake Engineering (Freshman, Fall 2002, Fall 2003)
5. Calculation of seismic actions (Grad, 6 hours, 1997 - 2001)
6. Advanced finite elements in inelastic and dynamic analysis (Grad, 33 hours, 1987 - 2001)
7. Finite elements (Grad, 33 hours, 1987 - 1996)
8. Seismic assessment, repair and strengthening (Grad, 6 hours, 1996 - 2001)
9. Earthquake design of steel structures (Grad, 15 hours, 1996 - 2001)
10. Earthquake loading (Grad, 33 hours, 1994 - 2001)
11. Experimental methods in dynamics (Grd, 6 hours 1988 - 1990)
12. Engineering computation (UG, 6 hours, 1989)
13. Tutoring on engineering drawing (UG, 33 hours, 1988)
14. Introduction to seismic hazard (UG, 4 hours, 1988)
15. Advanced numerical methods (Grad, 33 hours, 1987)
16. Advanced inelastic and dynamic FE analysis (Grad, 12 hours, 1987)

### Continuing Education

Course	Year	Number of Students	Delivery Method
Earthquake Engineering	2003-2013	40-75	live, on-site
Introduction to Structural Dynamics	2002-2003	60	live, on-site
Campus Honors Course in Earthquake Engineering	2002-2003	40	live, on-site
Introduction to Structural Engineering	2001	60	live, on-site

### Other Instructional Activities

1. Consequence-based Risk Management Course (full credit), Four modules contribution to a graduate full credit course at UIUC, also taken by Georgia Tech., 2006
2. Structural Dynamics – MSc and PhD Course, European School for Seismic Risk Reduction, University of Pravia, Italy, May 2002
3. Assessment and Repair of Structures – An Overview, Practical Seismic Design and Repair of Structures, SECED-IC Short Course, September 1999
4. Seismic Analysis of Steel and RC Structures, TEMPUS Course, University of Ljubljana, Slovenia, February 1989
5. Observations from Recent Earthquakes, Short Course on Seismic Design, University of Cairo, December 1989 and 1990
6. Earthquake Loading, MSc Course in Structural Engineering, University of Surrey, April 1991
7. Seismic Design of Steel Structures, Short Course on Seismic Design, University of Cairo, December 1989 and 1990
8. Repair and Strengthening of Earthquake-Damaged Structures, Society for Earthquake and Civil Engineering Dynamics (SECED) Short Course on Practical Seismic Design, London, September 1996

9. Seismic Design of Steel Structures, SECED Short Course on Practical Seismic Design, London, September 1996
10. The Northridge Earthquake of 17 October 1994, SECED Short Course on Practical Seismic Design, London, September 1996
11. Seismic Design of RC Bridges, European Union (EU) SERINA Course, Thessaloniki, September 1997
12. Repair and Strengthening of RC Structures, SERINA Course (EU), Thessaloniki, September 1997
13. Conceptual Seismic Design of RC Bridges, European Association of Earthquake Engineering, 18th Regional Seminar, Egypt, October 1997
14. Assessment of Earthquake Vulnerability of Structures, PhD Course, Polytechnic of Milan/University of Pavia, June 1998
15. Earthquake-Resistant Design and Status of European Codes, Advanced Course in Integrated Seismic Risk (EU), Kefalonia, Greece, September 1999
16. Seismic Design – An Overview, Practical Seismic Design and Repair of Structures, SECED-IC Short Course, September 1999
17. Future Trends in Seismic Analysis for Design, Practical Seismic Design and Repair of Structures, SECED-IC Short Course, September 1999

### Prelim and Final PhD Exams

Doctoral Candidate	Final Exam Date	(Co-) Chair
W. Aritenang (Imperial)	1989	Chair
K. Pilakoutas (Imperial)	1990	Chair
M. Lopes (Imperial)	1991	Chair
A. Elghazouli (Imperial)	1991	Chair
A. Salama (Imperial)	1992	Chair
B. Izzuddin (Imperial)	1992	Chair
M. Soliman (Imperial)	1992	Chair
E. M. Higazy (USC)	1993	Co-Chair Agbabian
A. Elmesallamy (Imperial)	1993	Chair
P. Madas (Imperial)	1993	Chair
B. Broderick (Imperial)	1994	Chair
E. Martinez (Imperial)	1996	Chair
F. D. Ashtiani (Imperial)	1997	Chair
M. Salvitti (Imperial)[MPhil]	1997	Chair
L. Song (Imperial)	1998	Co-Chair Izzuddin
D. Lee (Imperial)	1999	Chair
R. G. Goodfellow (Imperial)	1999	Chair
R. Pinho (Imperial)	2000	Chair
B. Borzi (Imperial)	2000	Chair
A. Mwafy (Imperial)	2001	Chair
A. Manafpour (Imperial)	2002	Chair Kappos
M. Tsujii (Imperial)	2002	Chair
T. Rossetto (Imperial)	2004	Chair
Seong-Hoon Jeong (Illinois)	2005	Chair
GunJin Yun (Illinois)	2006	Co-Chair Ghaboussi
Oh-Sung Kwon (Illinois)	2007	Chair
Gina Thermou (Greece)	2007	Co-Ch. Pantazopoulou
Jun Ji (Illinois)	2007	Chair Kuchma
Narutoshi Nakata (Illinois)	2007	Chair Spencer

Doctoral Candidate	Final Exam Date	(Co-) Chair
Young Suk Kim (Illinois)	2007	Chair Spencer
Himmat Karaman (ITU)	2008	Co-Chair Sahin
Sung Jig Kim (Illinois)	2008	Chair
Curtis Holub (Illinois)	2009	Chair
JunHee Kim (Illinois)	2009	Co-Chair Ghaboussi
Liang Chang (Illinois)	2009	Chair Spencer
Omar El Anwar (Illinois)	2009	Co-Chair Elrayes
Hussam Mahmoud (Illinois)	2011	Chair
Can Unen (Illinois)	2011	Co-Chair Sahin
Sheng-Lin Lin (Illinois)	2011	Chair
Bora Gencturk (Illinois)	2011	Chair
Adel Abdelnaby (Illinois)	2012	Chair
Do Soo Moon (Illinois)	2012	Chair
Thomas Frankie (Illinois)	2013	Co-Ch.Kuchma/Spencer
Seliem Serhan (ITU)	2013	Co-Chair Sahin
Hazam Al Anwar (Illinois)	2014	Chair
Hamed Akbarpour (Penn State)	2018	Chair

## Research, Creative, and Other Scholarly Activities

### Publications

#### Original Edition Books

1. Fundamentals of Earthquake Engineering – From Source to Fragility (expanded second edition), Elnashai, A.S., Di Sarno, L., Kown, O-S, Wiley Applied Science, 2015.
2. Fundamentals of Earthquake Engineering, Elnashai, A.S. and Di Sarno, L., Wiley and Sons, 2008.
3. Seismic Hazard in Lebanon and Surrounding Areas, Elnashai, A.S. and El Khoury , R., World Scientific Publishing Co., 2004.

#### Books Edited or Co-Edited

1. Implications of Recent Earthquakes on Seismic Risk, Innovation in Structures and Construction (book series) – Vol. 2, Joint editorship with P.J. Dowling, published by World Scientific Publishing Co., 2000.
2. Design of Modern Highrise Reinforced Concrete Structures, Innovation in Structures and Construction (book series) – Vol. 3, Joint editorship with P.J. Dowling, published by World Scientific Publishing Co., 2002.
3. Seismic Design of Masonry Structures, Implications of Recent Earthquakes on Seismic Risk, Innovation in Structures and Construction (book series) – Vol. 1, Joint editorship with P.J. Dowling, published by World Scientific Publishing Co., 1999.

#### Chapters in Books

1. Structural Seismic Design Optimization and Earthquake Engineering: Formulations and Applications, Elnashai, A.S. and Gencturk, B., Chapter 3: Life Cycle Cost Considerations in Seismic Design Optimization of Structures, pp. 1-22, Ed. V. Plevris, C.C. Mitropoulou, and N.D. Lagaros, 2012.
2. The 1755 Lisbon Earthquake: Revisited, In series: Geotechnical, Geological, and Earthquake Engineering, Vol. 7, Elnashai, A.S., and Jeong, S.-H., Chapter 19, Part 6.2: Rapid probabilistic assessment of structural systems in earthquake regions, pp. 335-349, Ed. L.A. Mendes-Victor, C.S. Sousa Oliveira, J. Azevedo, and A. Ribeiro, 2009.
3. Hybrid Simulation: Theory, Implementation and Applications. Kwon, O.S., Elnashai, A.S. and Spencer, B.F., Chapter 15: UI-SIMCOR: A global platform for hybrid distributed simulation, pp. 157-180, Eds. V.E Saouma and M.V. Sivaselvan, Taylor and Francis, 2008.

4. Designers' Guide to EN 1998-1 and EN 1998-5, Eurocode 8: Design of structures for earthquake resistance., General rules, seismic actions, design rules for buildings, foundations and retaining structures, Fardis, M.N., Carvalho, E. Elnashai, A.S., Faccioli, E., Pinto, P. and Plumier, A., 2005.
5. Seismic Assessment and Retrofit of Reinforced Concrete Buildings, Elnashai, A.S., Chapter 5: Seismic Retrofitting Techniques, FIB Bulletin, 2003.
6. Displacement Based Design of RC Structures, Elnashai, A.S., Chapter 5: Seismic Action, FIB Bulletin, 2003.
7. Manual of Bridge Engineering, Chapter 9: Seismic response and design, Thomas Telford, 2000. Updated and reprinted 2006.
8. Earthquake Loading, Elnashai, A.S., Chapter 2: Nonlinear analysis of structures, Viridi (ed.), Blackie, 1993.
9. Stability and Ductility of Steel Structures under Cyclic Loading, Elnashai, A.S. and Takanashi, K., Chapter: experiments on partially encased composite columns, pp. 175-186, Ed. Y. Fukumoto and G.C. Lee, 1992.
10. Seismic Design of Steel Structures, Elnashai, A.S. and Dowling, P.J., Chapter 2: Stability and strength of metal structures subjected to dynamic loading, Ed. R. Narayanan and T. Roberts, 1990.
11. Stability of Metal Structures: A World View, Elnashai, A.S. and Dowling, P.J., Chapter 10: Composite columns, Published by Structural Stability Research Council, Bethlehem, Pennsylvania, USA, 1989.

#### Articles In Journals

1. Influence of loading behavior on the post-buckling of circular rings, El Naschie, M.S. and Elnashai, A.S., American Institute of Aeronautics and Astronautics Journal, Vol. 14, No. 2, pp. 266-267, 1976.
2. A new pressurized grouted connection for steel tubulars, Dowling, P.J., Elnashai, A.S. and Carroll, B.C., Journal of Constructional Steel Research, Vol. 3, No. 3, pp. 32-38, 1983.
3. Some restrictions on Lehigh-Purdue concrete plasticity model, Elnashai, A.S. and Nicholson, R.W., Journal of Engineering Mechanics, Vol. 112, No. 2, pp. 217-221, 1986.
4. Lessons learnt from the Kalamata (Greece) earthquake of 13 September 1986, Elnashai, A.S., Pilakoutas, K., Ambraseys, N.N. and Lefas, I.D., European Earthquake Engineering, Vol. 1, pp. 11-19, 1987.
5. The Norwegian Sea earthquake of 8 August 1988, Ambraseys N.N., Elnashai A.S., Journal of European Earthquake Engineering, vol. 3, pp. 53-54, 1988.
6. Efficient large displacement elastoplastic dynamic analysis of steel frames, Elnashai, A.S., Izzuddin, B.A. and Dowling, P.J., European Earthquake Engineering, Vol. 3, pp. 32-41, 1989.
7. Experimental behaviour of reinforced concrete walls under earthquake loading, Elnashai, A.S., Pilakoutas, K. and Ambraseys, N.N., Earthquake Engineering and Structural Dynamics, Vol. 19, pp. 389-407, 1990.
8. Seismic hazard in the North Sea, Ambraseys, N.N. and Elnashai, A.S., Hydrocarbon Technology, vol.43, pp.103-109, 1990.
9. International assessment of design guidance for composite columns, Elnashai, A.S., El-Ghazouli, A.Y. and Dowling, P.J., Journal of Constructional Steel Research, Vol. 15, pp. 191-213, 1990.
10. Failure mechanisms of weld-beaded grouted pile/sleeve connections, Aritenang, W., Elnashai, A.S., Dowling, P.J. and Carroll, B.C., Marine Structures, Vol. 3, pp. 391-417, 1990.
11. Verification of pseudo-dynamic testing of steel members, Elnashai, A.S., El-Ghazouli, A.Y. and Dowling, P.J., Journal of Constructional Steel Research, Vol. 16, pp. 153-161, 1990.
12. Nonlinear modelling of weld-beaded composite tubular connections, Elnashai, A.S. and Aritenang, W., Engineering Structures, Vol. 13, pp. 34-42, 1991.
13. Effect of random material variability on seismic design parameters of steel frames, Elnashai, A.S. and Chryssanthopoulos, M., Earthquake Engineering and Structural Dynamics, Vol. 20, pp. 101-114, 1991.
14. Experimental behaviour of partially encased composite beam-columns under cyclic and dynamic loads, Elnashai, A.S., Takanashi, K., Elghazouli, A.Y. and Dowling, P.J., Proceedings of the Institution of Civil Engineers, Structures and Buildings, Vol. 91, Part 2, pp. 259-272, 1991.
15. Strength of composite tubular connections, Elnashai, A.S. and Dowling, P.J., Proceedings of the Institution of Civil Engineers, Structures and Buildings, Vol. 91, Part 2, pp. 377-398, 1991.
16. Techniques for repair and retrofitting of structures: A vulnerability reduction approach, Ambraseys, N.N., Dowling, P.J. and Elnashai, A.S., International Journal of Earthquake Engineering, Vol. 1, No. 2, pp. 83-103, 1991.
17. Eulerian formulation for large-displacement analysis of space frames, Izzuddin, B.A. and Elnashai, A.S., Journal of Engineering Mechanics, Vol. 119, No. 3, pp. 549-569, 1993.
18. Analysis-based design equations for composite tubular connections, Aritenang, W., Elnashai, A.S. and Dowling, P.J., Engineering Structures, Vol. 14, No. 3, pp. 195-204, 1992.

19. A new passive confinement model for the analysis of concrete structures subjected to cyclic and transient dynamic loading, Madas, P. and Elnashai, A.S., *Earthquake Engineering and Structural Dynamics*, Vol. 21, pp. 409-431, 1992.
20. Modelling of material non-linearities in steel structures subjected to transient dynamic loading, Elnashai, A.S. and Izzuddin, B.A., *Earthquake Engineering and Structural Dynamics*, Vol. 22, pp. 509-532, 1993.
21. Performance of composite steel/concrete members under earthquake loading, Part I: Analytical model, Elnashai, A.S. and Elghazouli, A.Y., *Earthquake Engineering and Structural Dynamics*, Vol. 22, pp. 315-345, 1993.
22. Performance of composite steel/concrete members under earthquake loading, Part II: Parametric studies and design considerations, Elghazouli, A.Y. and Elnashai, A.S., *Earthquake Engineering and Structural Dynamics*, Vol. 22, pp. 347-368, 1993.
23. Adaptive space frame analysis, Part I: A plastic hinge approach, Izzuddin, B.A. and Elnashai, A.S., *Proceedings of the Institution of Civil Engineers, Structures & Buildings*, Vol. 99, pp. 303-316, 1993.
24. Adaptive space frame analysis, Part II: A distributed plasticity approach, Izzuddin, B.A. and Elnashai, A.S., *Proceedings of the Institution of Civil Engineers, Structures & Buildings*, Vol. 99, pp. 317-326, 1993.
25. Sources of uncertainty and future research requirements in seismic analysis of structures, Elnashai, A.S. and Izzuddin, B.A., *Nuclear Energy*, Vol. 32, No. 4, pp. 213-220, 1993.
26. Observations on the effect of numerical dissipation on the nonlinear dynamic response of structural systems, Broderick, B.M., Elnashai, A.S. and Izzuddin, B.A., *Engineering Structures*, Vol. 16, No. 1, pp. 51-62, 1994.
27. An analytical solution for the probabilistic response of SDOF non-linear random systems subjected to variable amplitude cyclic loading, Manzocchi, G.M.E., Chryssanthopoulos, M. and Elnashai, A.S., *Earthquake Engineering and Structural Dynamics*, Vol. 23, pp. 489-506, 1994.
28. Seismic resistance of composite beam-columns in multi-storey structures, Part I: Experimental studies, Elnashai, A.S. and Broderick, B.M., *Journal of Constructional Steel Research*, Vol. 30, pp. 201-229, 1994.
29. Seismic resistance of composite beam-columns in multi-storey structures, Part II: Analytical model and discussion of results, Broderick, B.M. and Elnashai, A.S., *Journal of Constructional Steel Research*, Vol. 30, pp. 231-258, 1994.
30. Experimental observations on the seismic shear performance of RC beam-to-column connections subjected to varying axial column force, Agbabian, M.S., Higazy, E.M., Abdel-Ghaffar, A.M. and Elnashai, A.S., *Earthquake Engineering and Structural Dynamics*, Vol. 23, pp. 859-876, 1994.
31. Seismic behaviour of semi-rigid steel frames, Elnashai, A.S. and Elghazouli, A.Y., *Journal of Constructional Steel Research*, Vol. 29, pp. 149-174, 1994.
32. Advanced nonlinear formulation for reinforced concrete beam-columns, Izzuddin, B.A., Karayannis, C.G. and Elnashai, A.S., *Journal of Structural Engineering*, Vol. 120, No. 10, pp. 2913-2934, 1994.
33. Application of adaptive analysis to reinforced concrete frames, Karayannis, C.G., Izzuddin, B.A. and Elnashai, A.S., *Journal of Structural Engineering*, Vol. 120, No. 10, pp. 2935-2957, 1994.
34. Earthquake-resistant composite steel/concrete structures, Elnashai, A.S., Broderick, B.M. and Dowling, P.J., *The Structural Engineer*, Vol. 73, No. 8, pp. 121-132, 1995.
35. Cyclic behavior of reinforced concrete cantilever walls, Part I: Experimental results, Pilakoutas, K. and Elnashai, A., *ACI Structural Journal*, Vol. 92, No. 3, pp. 271-281, 1995.
36. Cyclic behavior of reinforced concrete cantilever walls, Part II: Discussions and theoretical comparisons, Pilakoutas, K. and Elnashai, A.S., *ACI Structural Journal*, Vol. 92, No. 4, pp. 425-434, 1995.
37. Analysis of the failure of Interstate 10 freeway ramp during the Northridge earthquake of 17 January 1994, Broderick, B.M. and Elnashai, A.S., *Earthquake Engineering and Structural Dynamics*, Vol. 24, pp. 189-208, 1995.
38. Seismic response of composite frames, Part I: Response criteria and input motion, Broderick, B.M. and Elnashai, A.S., *Engineering Structures*, Vol. 18, No. 9, pp. 696-706, 1996.
39. Seismic response of composite frames, Part II: Calculation of behaviour factors, Elnashai, A.S. and Broderick, B.M., *Engineering Structures*, Vol. 18, No. 9, pp. 707-723, 1996.
40. Analytical and field evidence of the damaging effect of vertical earthquake ground motion, Papazoglou, A.J. and Elnashai, A.S., *Earthquake Engineering and Structural Dynamics*, Vol. 25, pp. 1109-1137, 1996.
41. Behavior of beam-column connections under axial column tension, Higazy, E.M., Elnashai, A.S. and Agbabian, M.S., *Journal of Structural Engineering*, Vol. 122, No. 5, pp. 501-511, 1996.
42. Confined concrete model under cyclic load, Martinez-Rueda, J.E. and Elnashai, A.S., *Materials and Structures*, Vol. 30, pp. 139-147, 1997.
43. Effect of modelling assumptions and input motion characteristics on seismic design parameters of RC bridge piers, Elnashai, A.S. and McClure, D.C., *Earthquake Engineering and Structural Dynamics*, Vol. 25, pp. 435-463, 1996.



44. Procedure and spectra for analysis of RC structures subjected to strong vertical earthquake loads, Elnashai, A.S. and Papazoglou, A.J., *Journal of Earthquake Engineering*, Vol. 1, No.1, pp. 121-155, 1997.
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178. Hybrid Simulation with Multiple Support Excitation, Jian Li, Bill F. Spencer, Amr S. Elnashai and Brian F. Phillips, 5th World Conference on Structural Control and Monitoring, Tokyo, Japan, 12-14 July 2010.
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181. Hybrid Mathematical-Informational Method for Embedded Modeling of Components of Complex Systems, J. Ghaboussi and A.S. Elnashai, 2nd International Multi-Conference on Complexity, Informatics and Cybernetics (IMCIC), Orlando, Florida, USA, 27-30 March 2011.
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190. Hybrid Analytical-Experimental Simulation and Application to Semi-rigid Steel Frames, Elnashai, A.S, and Mahmoud, H., 8th STESSA International Conference, Shanghai, July 1-4, 2015.
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**Keynote and Invited Lectures** (including keynotes from above list)

Title	Conference/Organization	Location	Year
1. Seismic Resistance of Composite Structures	U Tokyo, Invited	University of Tokyo, Institute of Industrial Science, Tokyo, Japan	April 1990
2. Ductility of Composite Steel-Concrete Beam-columns	U Tokyo, Invited	University of Tokyo, Institute of Industrial Science, Tokyo, Japan	April 1992
3. Implications of Recent Earthquakes on Earthquake Risk	British Council, Invited	The British Council, Tokyo, Japan	June 1995
4. Damage to Steel Frame Structures in Recent Earthquakes	Keynote - International Conference on Modern Code Development	University of Cairo, Cairo, Egypt	November 26, 1995
5. Earthquake Risk in Egypt	British Council, Invited	The British Council, Cairo, Egypt	December 30, 1996
6. Simplified Methods for Accounting for Vertical Earthquake Motion in Design	FAU, Invited	Florida Atlantic University, Florida, USA	March 29, 1997
7. Seismic capacity rehabilitation of RC structures	Keynote - International Conference on Rehabilitation and Development of Civil Engineering Infrastructure Systems	Beirut, Lebanon	June 1997
8. Seismic Risk in the Middle East and Implication for Lebanon	The Order of Engineers Seminars	Beirut, Lebanon	June 16, 1997
9. Current status of EC8 and issues for future development	Keynote - Fourth Turkish National Conference on Earthquake Engineering	Ankara, Turkey	September 1997

<b>Title</b>	<b>Conference/Organization</b>	<b>Location</b>	<b>Year</b>
10. Earthquake resistance of high strength reinforced concrete buildings	Keynote - Sixth SECED Conference on Seismic Design Practice for the Next Millennium	Oxford, UK	March 1998
11. Observed Damage of RC Bridges and Impact on Conceptual Design	McMaster, Invited	McMaster U, Hamilton, Ontario, Canada	April 1999
12. Seismic Behavior of High Rise High Strength RC Structures	McMasert, Invited	McMaster U, Hamilton, Ontario, Canada	April 1999
13. Damage to RC structures in the Kocaeli earthquake: Inferior construction or unexpected demand?	Keynote - The Kocaeli Earthquake Conference	Istanbul Technical University, Istanbul, Turkey	December 1999
14. Integration of earthquake testing, analysis and field observations for seismic performance evaluation	Keynote - 12th European Conference on Earthquake Engineering	London, UK	September 2002
15. Next generation vulnerability functions for RC structures	Keynote - Response of Structures to Extreme Loading Conference	Toronto, Canada	August 2003
16. Development of Multi-state Codes; The Experience of Eurocode 8 for Seismic Design,	Keynote - Arab Codes Symposium, HBRC	Cairo, Egypt	21-23 September 2003
17. Newmark Distinguished Lecture: Vulnerability Assessment under Earthquake Action: from Field Observations to Hybrid Simulations	Distinguished Lectures Series	University of Illinois, Urbana-Champaign, Illinois, USA	18 October 2004
18. Approaches to the Assessment of Earthquake Response of Complex Structural Systems	Keynote - The HBRC 50th Anniversary Conference	Cairo, Egypt	20-22 December 2004
19. Multi-platform earthquake analysis of geotechnical structural systems	ASCE International Conference on Computing in Civil Engineering	Cancun, Mexico	July 12-15, 2005
20. Seismic assessment of high rise RC structures using multi-resolution multi-platform analysis	Keynote - The Indonesian Society of Civil and Structural Engineers (HAKI) Conference	Jakarta, Indonesia	August 2006
21. Advances in computational methods in structural dynamics and earthquake engineering	Keynote - Computational Methods in Structural Dynamics and Earthquake Engineering (COMPdyn 2007)	Crete, Greece	June 2007
22. Recent Developments in Earthquake Engineering	DUT, Invited	Demokritus University of Thrace, Greece	October 2007
23. Seismic response evaluation of high-rise RC buildings subjected to near and far earthquakes	Keynote - 8th Pacific Conference on Earthquake Engineering (8PCEE)	Singapore	December 2007

<b>Title</b>	<b>Conference/Organization</b>	<b>Location</b>	<b>Year</b>
24. Applications and challenges of scenario-based analytical earthquake impact assessment	Keynote - International Conference on Earthquake Engineering and Disaster Mitigation	Jakarta, Indonesia	April 2008
25. Fragility Analysis of RC Bridges with Soil-Structure Interaction and Liquefaction	Invited UCL	University College London	May 2009
26. Earthquake Impact on Vulnerable Communities and Requirements for Mitigation, Response and Recovery	Keynote - International Symposium of Earthquake Engineering	Sakarya, Turkey	October 2009
27. Hybrid Mathematical-Informational Modeling of Structural Systems	Keynote - 3rd International Conference on Computational Methods in Structural Dynamics and Earthquake Engineering	Corfu, Greece	May 2011
28. Hybrid Mathematical-Informational Modeling of Complex Systems	Keynote - Mathematics and Earth Workshop	Zaragoza, Spain	June 2011
29. Integrated and Interdisciplinary Earthquake Impact Assessment for Mitigation, Response and Recovery	Invited - International Council of Academies of Engineering and Technological Sciences	Mexico City, Mexico	June 2011
30. Multi-Objective Optimal Seismic Design of Buildings Using Advanced Engineering Materials	Invited UNapoli	University of Napoli Federico II, Napoli, Italy	July 2011
31. Analytical and Experimental Investigation of the Effect of Vertical Ground Motion on RC Bridge Piers	Invited UCSD	University of California, San Diego, California	July 2011
32. Early observations from the Magnitude Mw 7.0 January 12, 2010 Haiti Earthquake	Keynote - Fifth International Conference on Structural Engineering, Mechanics and Computation	Cape Town, South Africa	September 2011
33. Multi-Objective Optimal Seismic Design of Buildings Using Advanced Engineering Materials	Keynote - Jordan Order of Engineers Fifth International Civil Engineering Conference	Amman, Jordan	January 2012
34. Integrated Seismic Assessment of Plan-Irregular Structures	Invited CSU	Colorado State University	September 2012
35. Integrated Seismic Assessment of Plan-Irregular Structures	Invited - Distinguished Speakers Series	University of Houston	October 2012
36. Hybrid Simulation and Optimization of Reinforced Concrete and High-performance Fiber Concrete	Keynote - International Conference on Earthquake Engineering	Skopje, Macedonia	May, 2013



Title	Conference/Organization	Location	Year
37. Hybrid Simulation in Earthquake Assessment	Keynote - International Conference on Earthquake Engineering and Seismicity	Skopje, Macedonia	May 2015
38. Hybrid Analytical-Experimental Simulation and Application to Semi-rigid Steel Frames	Keynote - 8 <sup>th</sup> STESSA International Conference	Shanghai	July 2015
39. Analytical-Experimental Simulation in Earthquake Response Assessment	Keynote - International Conference on Structural Engineering, Mechanics and Computation	Cape Town, SA	September 2016
40. Optimized Temporary Housing Assignments after Disasters	Keynote – 9 <sup>th</sup> International Conference on Construction in the 21st Century	Dubai, UAE	March 5-7, 2017
41. Distributed Analysis of Interacting Soil and Structural Systems under Dynamic Loading	Invited - International Conference On Sustainable Civil Infrastructures: Innovative Infrastructure Geotechnology”	Sharm El-Sheikh, Egypt	July 15-19, 2017

#### Magazine Articles

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2. Aftershocks ..., Elnashai, A.S., The World Today, Magazine of the Royal Institute of International Affairs, pp. 12-14, October 1999.
3. The Hyogo-ken Nanbu (Kobe) Earthquake of 17 January 1995, Elnashai, A.S., Magazine of the Royal Academy of Engineering, 1996.
4. Comments on the performance of steel structures in the Northridge (Southern California) earthquake of 17 January 1994, Elnashai, A.S., New Steel Construction, Vol. 2, No. 5, pp. 36-37, October 1994.
5. Seismic hazard in the North Sea, Ambraseys, N.N. and Elnashai, A.S., Hydrocarbon Technology, Vol. 3, March 1990.
6. The Norwegian Sea earthquake of 8 August 1988, Ambraseys, N.N. and Elnashai, A.S., The Offshore Engineer, October 1988.
7. Several more articles in the Civil and Environmental Engineering Department (2009 onwards) and the Mid-America Earthquake Center (2004 to 2009) magazines.

#### Reports

1. Nonlinear modeling of plain concrete, Elnashai, A.S. and Dowling, P.J., Marine Technology Report No. SS-40, London Centre for Marine Technology, Imperial College, UK, 1982.
2. Bond strength of grouted connections, Elnashai, A.S. and Dowling, P.J., Marine Technology, Imperial College, UK, 1983.
3. Nonlinear finite element analysis of grouted stressed clamp, Elnashai, A.S. and Nicholson, R.W., In ‘Durability of a stressed grouted clamp’, Wimpey Offshore Report No. WOL 260/84. British Petroleum (UK), 1984.
4. Thermal and load analysis of concrete bell foundations, Elnashai, A.S., Wimpey Offshore Report No. WOL 6/85a, Woodside Petroleum, Australia, 1985.
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6. Vortex-induced vibrations of conductors, Elnashai, A.S., In ‘TL085 Troll East Hybrid Monotower Platform, Jacket Design Study’, Wimpey Offshore Report No. 288/85, Saga Petroleum, Norway, 1985.
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8. Quality assurance manual for OFFPAF: A development of PAFEC for the analysis and design of offshore structures, Elnashai, A.S. (Editor), Wimpey Offshore, 1985.
9. Composite steel/concrete connections: analytical studies and a design equation, Elnashai, A.S. and Dowling, P.J., Engineering Seismology and Earthquake Engineering Report No. ESEE 6/86, Imperial College, UK, 1986.
10. The Kalamata (Greece) earthquake of 13 September 1986, Elnashai, A.S. and Pilakoutas, K., Engineering Seismology and Earthquake Engineering Report No. ESEE 9/86, Imperial College, UK, December 1986.
11. Large displacement elastoplastic analysis of steel frames, Izzuddin, B.A., Elnashai, A.S. Dowling, P.J. and Ward, J.K., Engineering Seismology and Earthquake Engineering Report No. ESEE 4/88, May 1988.
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13. Failure mechanisms for weld-beaded composite connections, Dowling, P.J., Elnashai, A.S., Aritenang, W. and Carroll, B.C., CESLIC Report No. GC-04, submitted to the Marine Technology Directorate, UK, January 1989.
14. Transient fluid-structure dynamic interaction procedures, Chelghoum, A.E.K., Elnashai, A.S. and Dowling, P.J., Engineering Seismology and Earthquake Engineering Report No. ESEE 2/89, March 1989.
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16. The Killini Earthquakes of October and November 1988, Joint with staff and students of ESEE Section, Engineering Seismology and Earthquake Engineering Report No. ESEE 6/89, September 1989.
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18. A Theoretical model for composite beam-columns under cyclic loading, Madas, P. and Elnashai, A.S., Engineering Seismology and Earthquake Engineering Report No. ESEE 10/89, September 1989.
19. Experimental behavior of reinforced concrete structural walls subjected to cyclic and shake-table loading, Elnashai, A.S., Pilakoutas, K. and Ambraseys, N.N., Engineering Seismology and Earthquake Engineering Report No. ESEE 12/89, December 1989.
20. Effect of random material variability on the structural response of steel frames, Alexopulu, P., Elnashai, A.S. and Chryssanthopoulos, M., Engineering Seismology and Earthquake Engineering Report No. ESEE 8/89, September 1989.
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29. Experimental behavior of steel and composite frames under cyclic and dynamic loading, Elnashai, A.S., Takanashi, K., Elghazouli, A.Y. and Ohi, K., Engineering Seismology and Earthquake Engineering Report No. ESEE 10/92, November 1992.

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34. Ductility of concrete members reinforced with high strength steel, Salvitti, L.M. and Elnashai, A.S., Prenormative research in support of Eurocode, Report No. PREC 802, September 1994.
35. The Hyogo-ken Nanbu Earthquake of 17 January 1995, Selected Engineering Seismology and Structural Studies, Elnashai, A.S., Bommer, J.J., Baron, C.I. and Salama, A.I., Engineering Seismology and Earthquake Engineering Report No. ESEE 2/95, September 1995.
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37. Vertical earthquake ground motion; evidence, effects and simplified analysis procedures, Elnashai, A.S. and Papazoglou, A., Engineering Seismology and Earthquake Engineering Report No. ESEE 6/95, December 1995.
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39. Experimental and analytical investigations into the seismic behavior of semi-rigid steel frames, Elnashai, A.S., Danesh Ashtiani, F.A. and Elghazouli, A.Y., Engineering Seismology and Earthquake Engineering Report No. ESEE 96-7, December 1996.
40. Repair and strengthening of RC walls using selective techniques, Elnashai, A.S. and Pinho, R., Engineering Seismology and Earthquake Engineering Report No. ESEE 97-1, January 1997.
41. JAPANCAT A program for earthquake insurance loss estimation in Japan, Winkler, T. and Elnashai, A.S., EQE Report No. 403-2.
42. Review and development of response spectra for displacement-based seismic design, Bommer, J.J., Elnashai, A.S., Chlimintzas, G.O. and Lee, D., Engineering Seismology and Earthquake Engineering Report No. ESEE 98-3, March 1998.
43. Inelastic spectra and ductility-damping relationships for displacement-based seismic design, Borzi, B., Elnashai, A.S., Faccioli, E., Calvi, G.M. and Bommer, J.J., Engineering Seismology and Earthquake Engineering Report No. ESEE 98-4, May 1998.
44. Observations on the effects of the Adana-Ceyhan (Turkey) earthquake of 27 June 1998, Elnashai, A.S., Engineering Seismology and Earthquake Engineering Report No. ESEE 98-5, August 1998.
45. Inelastic dynamic response of RC bridges to non-synchronous earthquake input-motion, Tzanetos, N., Elnashai, A.S., Hamdan, F. and Antoniou, S., Engineering Seismology and Earthquake Engineering Report No. ESEE 98-6, August 1998.
46. Parameterised displacement spectra for seismic design, Bommer, J.J. and Elnashai, A.S., Engineering Seismology and Earthquake Engineering Report No. ESEE 98-7, August 1998.
47. Seismic performance and cost-benefit assessment of high rise high strength concrete buildings, Laogan, B.T. and Elnashai, A.S., Engineering Seismology and Earthquake Engineering Report No. ESEE 98-8, November 1998.
48. Assessment of response of multi-story buildings using force- and displacement-based approaches, Borzi, B. and Elnashai, A.S., Engineering Seismology and Earthquake Engineering Report No. ESEE 99-2, October 1999.
49. The Kocaeli (Turkey) earthquake of 17 August 1999: Assessment of spectra and structural response analysis, Elnashai, A.S., Engineering Seismology and Earthquake Engineering Report No. ESEE 99-3, November 1999 (on CD).
50. The North Athens (Greece) earthquake of 7 September 1999: Analytical studies of structural response, Elnashai, A.S., Engineering Seismology and Earthquake Engineering Report No. ESEE 99-4, November 1999 (on CD).
51. Static pushover versus dynamic-to-collapse analysis of RC structures, Mwafy, A.A. and Elnashai, A.S., Engineering Seismology and Earthquake Engineering Report No. ESEE 00-1, January 2000.
52. INDYAS – A Program for INelastic DYnamic Analysis of Structures, Elnashai, A.S., Pinho, R. and Antoniou, S., Engineering Seismology and Earthquake Engineering Report No. ESEE 00-2, June 2000.

53. Ductility of RC members constructed from high strength concrete and reinforcing steel, Goodfellow, R.C. and Elnashai, A.S., Engineering Seismology and Earthquake Engineering Report No. ESEE 00-3, August 2000.
54. Deformation-based analytical vulnerability functions for RC bridges, Elnashai, A.S. and Borzi, B., Engineering Seismology and Earthquake Engineering Report No. ESEE 00-6, September 2000.
55. Task 1.1: Performance parameters and criteria for assessment and rehabilitation, Task 1.2: Rehabilitation strategies for RC and masonry buildings, Thermou, G.E., and Elnashai, A.S., SPEAR Project Report No. G6RD-CT-2001-00525 (Seismic Performance Assessment and Rehabilitation, Imperial College of Science, Technology and Medicine, UK), 2002.
56. Seismic retrofitting of steel and composite buildings, Di Sarno L. and Elnashai, A.S., Mid-America Earthquake Center, University of Illinois at Urbana-Champaign, CD Release 02-01, September 2002.
57. Seismic vulnerability of flat-slab structures, Erberik, M.A. and Elnashai, A.S., Mid-America Earthquake Center, University of Illinois at Urbana-Champaign, CD Release 03-06, May 2003.
58. Analytical assessment of an irregular RC full scale 3D test structure, Jeong, S-H. And Elnashai, A.S., Mid-America Earthquake Center, University of Illinois at Urbana-Champaign, CD Release 03-02, October 2003.
59. Zeus NL – A system for inelastic analysis of structures, Elnashai, A., Papanikolaou, V. and Lee, D., Mid-America Earthquake Center, University of Illinois at Urbana-Champaign, CD Release 04-01, February 2004.
60. The Kashmir Earthquake of October 8, 2005, A Quick Look Report, Durrani, A.J., Elnashai, A.S., Hashash, Y.M.A., Kim, S.J., and Masud, A., Mid-America Earthquake Center, University of Illinois at Urbana-Champaign, CD Release 05-04, October 2005.
61. Limits of applicability of conventional and advanced pushover analysis for seismic response assessment, Papanikolaou, V., Elnashai, A. and Pareja, J., Mid-America Earthquake Center, University of Illinois at Urbana-Champaign, CD Release 05-02, April 2005.
62. User manual and examples for UI-SimCor v2.0 and NEES-SAM v2.0, Kwon, O., Nakata, N., Park, K., Elnashai, A. and Spencer, B., A program manual for multi-site hybrid simulation framework, University of Illinois at Urbana-Champaign, 2006.
63. Hybrid test using UI-SimCor, three-site experiment, Spencer, B., Elnashai, A., Park, K. and Kwon, O., Final report to NEESit for Phase I project of hybrid simulation framework development, University of Illinois at Urbana-Champaign, 2006.
64. Seismic assessment of the I-155 bridge at Caruthersville with SSI and retrofit, Elnashai, A., Mwafy, A. and Kwon, O., Interim Report No. 1, Mid-America Earthquake Center, University of Illinois at Urbana-Champaign, 2006.
65. The Yogyakarta (Indonesia) earthquake of 25 May 2006, observations, reconstruction of hazard and recommendations, Elnashai, A.S., Kim, S-J. and Yun, G-J., Mid-America Earthquake Center, University of Illinois at Urbana-Champaign, CD Release 07-02, March 2007.
66. Comprehensive seismic loss assessment for the State of Illinois, LaFore, S. and Elnashai, A.S., Interim Report No. 1, Mid-America Earthquake Center, University of Illinois at Urbana-Champaign, CD Release 07-01, April 2007.
67. New Madrid seismic zone catastrophic earthquake response planning, Cleveland, L.J. and Elnashai, A.S., Interim Report 1, Mid-America Earthquake Center, University of Illinois at Urbana-Champaign, CD Release 07-03, May 2007.
68. Analytical assessment of the damage potential of the Kashmir (Pakistan) earthquake of October 8, 2005, Elnashai, A.S. and Kim, S.J., Mid-America Earthquake Center, University of Illinois at Urbana-Champaign, CD Release 07-04, May 2007.
69. Assessment of seismic integrity of multi-span curved bridges in Mid-America, Elnashai, A.S. and Mwafy, A.M., Mid-America Earthquake Center, University of Illinois at Urbana-Champaign, CD Release 07-08, May 2007.
70. Modeling of hysteretic behavior of beam-column connections based on self-learning simulations, Yun, G.J., Ghaboussi, J. and Elnashai, A.S., Mid-America Earthquake Center, University of Illinois at Urbana-Champaign, CD Release 07-13, August 2007.
71. Seismic fragility assessment for reinforced concrete high-rise buildings, Ji, J., Elnashai, A.S. and Kuchma, D.A., Mid-America Earthquake Center, University of Illinois at Urbana-Champaign, CD Release 07-14, September 2007.
72. Probabilistic seismic assessment of structure, foundation, and soil interacting systems, Kwon, O-S. and Elnashai, A.S., Mid-America Earthquake Center, University of Illinois at Urbana-Champaign, CD Release 07-15, September 2007.

73. Seismic performance of interdependent lifeline systems, Kim, Y.S., Spencer, B.F., Song, J., Elnashai, A.S. and Stokes, T., Mid-America Earthquake Center, University of Illinois at Urbana-Champaign, CD Release 07-16, September 2007.
74. The Pisco-Chincha earthquake of August 15, 2007: Seismological, geological and structural assessments, Elnashai, A.S., Kwon, O., Pineda, O., Alva, J., Moran, L., and Huaco, G., Mid-America Earthquake Center, University of Illinois at Urbana-Champaign, CD Release 08-01, October 2008.
75. Impact of earthquakes on the Central USA, Elnashai, A.S., Cleveland, L.J., Jefferson, T., Harrald, J., Mid-America Earthquake Center, University of Illinois at Urbana-Champaign, CD Release 08-02, September 2008.
76. Design and Assessment Models and Spectra for Repaired Reinforced Concrete Structures Thermou, Georgia E., Pantazopoulou, Stavroula J., and Elnashai, Amr S., Mid-America Earthquake Center, University of Illinois at Urbana-Champaign, CD Release 09-01, May 2009.
77. Impact of New Madrid Seismic Zone Earthquakes on the Central USA, Elnashai, A.S., Cleveland, L.J., Jefferson, T., Harrald, J., Mid-America Earthquake Center, University of Illinois at Urbana-Champaign, CD Release 09-03, November 2009.
78. The Maule (Chile) Earthquake of February 27, 2010: Consequence Assessment and Case Studies, Elnashai, Amr S., Gencturk, Bora, Kwon, Oh-Sung, Al-Qadi, Imad L., Hashash, Youssef, Roesler, Jeffery R., Kim, Sung Jig, Jeong, Seong-Hoon, Dukes, Jazalyn, and Valdivia, Angharad, Mid-America Earthquake Center, University of Illinois at Urbana-Champaign, CD Release 10-04, December 2010.

## Grants and Contracts

### For Research

Years (Inclusive)	Brief Title or Description	Source of Funds	Total Funding	Funds Allocated to this prof	#PI's and lead PI if not this prof
2001 - 2006;	Masters Training in Earthquake Risk Management	EPSRC	\$1.2M	\$1.2M	
2002	Structure Retrofit Strategies	NSF-MAE	\$420K	\$210k	M.B. Hueste
2002	Response Analysis Tools	NSF-MAE	\$368K	\$250k	M. Aschheim
2002 – 2004	Multi-Axial Full-scale Sub-Structured Testing and Simulation (MUST-SIM) Facility	NSF	\$3.3M	Facility Building	Kuchma, Spencer, Alleyne
2003	Analytical Assessment of Seismic Performance of Bridges	FHWA	\$25K	\$25K	
2001	Seismic Performance Evaluation Rehabilitation (SPEAR)	European Community	\$1.5M	\$400K	5 European partners
2002	CM-4 Structural Retrofit Strategies	NSF	\$380K	\$380K	
2004-2014	Network for Earthquake Engineering Simulations NEES – Operations and Maintenance	NSF	~\$9M	Operation and Maintenance	Spencer and Kuchma
2002	DS-3 Response Analysis Tools	NSF	\$410K	\$410K	

Years (Inclusive)	Brief Title or Description	Source of Funds	Total Funding	Funds Allocated to this prof	#PI's and lead PI if not this prof
2004-2009	MAE Center	NSF	~\$22M (external only)	~\$4M	Sole PI (many subcontracts to core institutions)
2004	Enhanced Load Control and Education-Training Features for UIUC NEES Site (equipment)	NSF	\$198K	Education, Outreach, Training	Spencer and Kuchma
2005	Seismic Retrofit Study of Bridge A-1700	Missouri Dept. of Transportation-Jacobs Engineering	\$272K	\$200K	Hashash
2005	NEESR-SG Bridges	NSF	\$1.2M	\$285K	4 universities
2005	Cast iron pilot project with MAE center	Memphis Light Gas & Water	\$15K	\$10K	Spencer
2006	Loss Model for Illinois	IEMA	\$250K	\$250k	
2006 - 2009	NMSZ Loss Assessment in the Central USA	FEMA (CERL)	\$4.5M	\$3.5M	2 universities
2006	MAEviz Impact of Earthquakes on Istanbul Buildings	ITU-Istanbul Municipality	\$100K	\$100k	
2006	Pakistan Schools and Hospitals project	USAID-Pakistan	\$87K	\$50k	Masud, Hajjar
2007	NEESR-SD	NSF	\$200K	\$100k	Spencer
2007	St. Louis HAZUS analysis	AMEC Earth and Environment	\$14K	\$14K	
2008	Development of MAEVIZ-Laclede	Laclede Gas Company	\$90K	\$90K	
2008	Development of MAEVIZ-Centerpoint	CenterPoint Energy	\$60K	\$60K	
2008-2011	Modeling Building Downtime due to Hurricane Impacts	NSF	\$32K	\$16k	Spencer

#### Areas of Research

1. Investigation of the performance of engineering systems subjected to earthquake ground motion using analysis, testing and field observations. Systems investigated include buildings, bridges, utility networks, transportation
2. Disaster impact assessment, mitigation and recovery on a regional and national levels, and optimization of post-disaster housing
3. Applications of high performance and sustainable materials in earthquake design applications
4. Multi-hazard design of highrise buildings
5. Fire modeling and the effect of interaction between fire and earthquakes on structural performance

#### Graduate Thesis Research Advising

##### M.S. Thesis Students

About 90 MSc thesis students graduated at Imperial College, London. List below is at Illinois only.

Student Name	Year Graduated	Thesis Title	Placement
John Barry	2005	Semi-rigid Steel Frames	Thornton Tomasetti, USA
Nick Berdette	2005	Curved Bridges	Ove Arup, UK
Susan LaFore	2006	Impact of Earthquakes on the State of Illinois	Consulting, USA
Lisa Cleveland	2006	Impact of New Madrid Earthquakes on the Central USA	Sargeant and Lundy, USA
Bora Gencturk	2007	A New Pushover-Based Fragility Method	U of Houston, USA
Roberto Suarez	2007	Earthquake Impact on the State of Illinois	Consultant, USA
David Bennier	2009	Hybrid Simulation of Semi-rigid Steel Frames	HNTB, USA
Anisa Como	2010	Integrated Impact of Central US Earthquakes	U of Colorado (grad student)
Thomas Frankie	2010	ANalysis-based Fragility of Masonry Structures	U of Illinois (grad student)
Gulen Ozkula	2011	Advanced Steel Materials for Seismic Design	UC San Diego (grad student)
Amanda Lewis	2011	Fragility Analysis of Asphalt Pavement	Consultant, USA
Elisa Chen	2012	Mutli-hazard Assessment of High Rise Buildings	Magnusson Klemencic Associates, USA

#### Ph.D. Thesis Students

Student Name	Year Graduated	Thesis Title	Placement
1. W. Aritenang (Imperial)	1989	Composite Tubular Connections for Offshore Applications	Ministry of Transportation, Indonesia
2. K. Pilakoutas (Imperial)	1990	Seismic Performance of RC Walls	Professor, U of Sheffield
3. M. Lopes (Imperial)	1991	Shear Dominated RC Walls	Professor, U of Lisbon
4. A. Salama (Imperial)	1992	Repair and Retrofitting of RC Walls	Consultant, Dubai and Egypt
5. A. Elghazouli (Imperial)	1991	Seismic Behavior of Composite Columns	Professor, Imperial College
6. B. Izzuddin (Imperial)	1992	Advanced Inelastic Dynamic Analysis of Offshore Platforms	Professor, Imperial College
7. M. Soliman (Imperial)	1992	Automated Assessment of Seismic Vulnerability	Professor, U of Zagazig, Egypt
8. B. Broderick (Imperial)	1994	Seismic Behavior of Composite Frames	Professor, Trinity College, Dublin
9. E.M. Higazy (Imperial)	1993	Shear in RC Beam-column Connections	Professor, Ain Shams U, Egypt
10. A. Elmesallamy (Imperial)	1993	Three-dimensional Analysis of RC Structures	Professor, U of Mansoura, Egypt
11. P. Madas (Imperial)	1993	Seismic Performance of Semi-Rigid and Composite Frames	Consultant, Greece
12. E. Martinez (Imperial)	1996	A New Energy Dissipation Device for RC Buildings	Professor, U of Brighton

Student Name	Year Graduated	Thesis Title	Placement
13. F.D. Ashtiani (Imperial)	1997	Experimental and Analytical Study of Semi-rigid Frames	Ministry of Construction, Iran
14. D. Lee (Imperial)	1999	Flexure-Shear-Axial Interaction in Concrete Columns	Professor, Peche U, Korea
15. L. Song (Imperial)	1998	Combined Earthquake and Fire Analysis of Buildings	Consultant, Japan
16. R.G. Goodfellow (Imperial)	1999	High Performance RC Structures	Consultant, Ireland
17. R. Pinho (Imperial)	2000	Seismic Assessment of RC Structures	Professor, U of Pavia
18. B. Borzi (Imperial)	2000	Methods and Spectra for Displacement-based Design	Professor, U of Pavia
19. A. Mwafy (Imperial)	2001	Advanced Inelastic Pushover of RC Buildings	Professor, U of UAE (Al Ain)
20. A. Manafpour (Imperial)	2002	Refined Analysis Methods for RC Buildings	Consultant, UK
21. M. Tsujii (Imperial)	2002	Shaking Table Testing of Steel Frames	Nippon Steel, Japan
22. T. Rossetto (Imperial)	2004	Fragility Analysis of European Buildings	Professor, U College, London
23. Seong-Hoon Jeong (Illinois)	2005	Refined Testing and Analysis of 3D RC Buildings	Professor, Inha U, Korea
24. GunJin Yun (Illinois)	2006	Neural Network Solutions for Structural Systems	Professor, U of Akron, USA
25. Oh-Sung Kwon (Illinois)	2007	Fragility of RC Bridges with Soil-structure Interaction	Professor, U of Toronto, USA
26. Gina Thermou (Greece)	2007	Strengthening of RC Buildings	Professor, Aristotle, Greece
27. Jun Ji (Illinois)	2007	Multiplatform Fragility Analysis of High-rise Buildings	Consultant, USA
28. Narutoshi Nakata (Illinois)	2007	Hybrid Simulation of Skew Bridges	Professor, Johns Hopkins, USA
29. Young Suk Kim (Illinois)	2007	Optimized Static Transportation and Utility Network Models	Consultant, USA
30. Himmet Karaman (ITU)	2008	Risk Assessment of Istanbul, Turkey	Professor, Istanbul Technical U
31. Sung Jig Kim (Illinois)	2008	Effect of Vertical Motion on RC Bridges	Professor, Keimyung U, Korea
32. Curtis Holub (Illinois)	2009	Testing and Analysis of RC Bridges with Vertical Motion Effects	ExxonMobil, USA
33. JunHee Kim (Illinois)	2009	Neural Networks Applications to Steel Frames	Professor, Yonsei U., Korea
34. Omar El Anwar (Illinois)	2009	Optimization of Post-disaster Housing	Professor, U of Washington, USA
35. Nihan Dogramaci (Yildiz U)	2009	Seismic Behavior of Semi-rigid Frames	Professor, Fatih U, Turkey
36. Liang Chang (Illinois)	2010	Static and Dynamic Transportation Network Modeling	Consultant, USA



Student Name	Year Graduated	Thesis Title	Placement
37. Can Unen (ITU)	2011	Interactive Utility networks Modeling in the USA and Turkey	Senior Researcher, ITU, Turkey
38. Hussam Mahmoud (Illinois)	2011	Hybrid Testing of Steel Frames with Semi-rigid Connections	Professor, Colorado State U, USA
39. Sheng-Lin Lin (Illinois)	2011	Integrated and Refined Earthquake Impact Assessment	RMS, Canterbury, New Zealand
40. Bora Gencturk (Illinois)	2011	Advanced Concrete Materials and Applications in Seismic Design	Professor, U of Southern California
41. Do Soo Moon (Illinois)	2012	Kinematically Eccentric RC Buildings	Post-doc, Illinois
42. Adel Essam Abdelnaby (Illinois)	2012	Multiple Earthquake Effects on RC Buildings	Professor, U of Memphis
43. Seliem Serhan (ITU)	2013	Physics-based Fire after Earthquakes Models	Professor, Osmaniye U, Turkey
44. Xiowen Yao (Zeijiang)	2013	Seismic Performance of RC Arch Dams in China	Senior researcher, Zeijiang
45. Thomas Frankie (Illinois)	2013	Hybrid Simulation and Fragility of Curved RC Bridges	WJE, Chicago
46. Hazam Al Anwar (Illinois)	2015	Model Updating in Hybrid Simulation	Professor, Cairo U.
47. Hamed Akbarpour (Penn State)	2018	Fire Following Earthquake: Analysis, Assessment and Mitigation Design	-

#### Editorships of Journals or Other Learned Publications

1. Journal of Earthquake Engineering, Founder and Editor-in-Chief, currently published by Taylor and Francis, 1996 – present (published 1996-2004 by World Scientific Publishing Co.)
2. Natural Disasters, Member of the Board of Editors, 2006 – present
3. Journal of Earthquake Engineering and Engineering Vibrations, Member of the Board of Editors, 2005 – present
4. Progress in Structures and Materials, Earthquake Engineering Editor, published by John Wiley and Sons, Ltd., September 1997-2004
5. Implications of Recent Earthquakes on Seismic Risk, Proceedings of the 3rd Japan-UK Seismic Risk Forum Workshop, London, published by Imperial College Press/World Scientific Publishing Company, April 6-8, 2000
6. The Structural Design of Tall Buildings, member of Board of Editors, published by John Wiley and Sons, April 1996
7. 'European Seismic Design Practice; Research and Application', Proceedings of the Fifth SECED Conference, Chester, October 27-28, 1995 (A.A. Balkema)
8. Seismic Behavior of Steel Structures, Special Issue of the Journal of Constructional Steel Research, published by Elsevier, December 1993
9. Simplicity and Confidence in Seismic Design, The 4th Mallet-Milne Lecture, T. Paulay, published by John Wiley and Sons, Ltd., November 1993
10. Reduction of Vibration, The 3rd Mallet-Milne Lecture, G. Warburton, published by John Wiley and Sons, December 1992

#### Post-doctoral Associates and Visiting Scientists

Name	Country of Origin	Permanent Employer	Years
Omar Pineda-Porras	Mexico	National Autonomous University of Mexico	September 2006 – August 2008

Name	Country of Origin	Permanent Employer	Years
Zakir Hussain	Pakistan	University of Engineering & Technology, Peshawar	April 2008 – January 2010
Huseyin Can Unen	Turkey	Istanbul Technical University	February 2008 – May 2009
Soo-Yeon Seo	Korea	Chungju National University (CJNU)	January 2008 – January 2009
Vincent Yang	Taiwan	NCREE	June-August 2008
Fikri Acar	Turkey	Middle East Technical University	June 2008 – June 2009
Young-Sun Choun	Korea	Korea Atomic Energy Research Institute	August 2008 – July 2009
Giulio Martire	Italy	Department of Structural Engineering, University of Naples "Federico II"	January 2009 - May 2010
Khan Shaahzada	Pakistan	University of Engineering & Technology, Peshawar	January 2010 - January 2011
Muhammad Ashraf	Pakistan	University of Engineering & Technology, Peshawar	January 2010 - January 2011
Cenk Aksoylar	Turkey	Istanbul Technical University	January-June 2011
Nihan Dogramaci	Turkey	Yildiz Univeristy	January-June 2011
Changdong Zhou	China	Jaitong University	December 2011- December 2012
Takashi Miyamoto	Japan	Tokyo University	June-August 2012
Mahmoud Jabareen	Israel	Tecnion Tel Aviv	August 2015

### Conferences Organized or Chaired

1. Chairman of Conference Committee, Society of Earthquake and Civil Engineering Dynamics (SECED) Conference on Seismic Design Codes in the Next Millennium, Chester, 1995
2. Chairman of Conference Committee, 12th European Conference on Earthquake Engineering, London 2002 (chairman from September 1998 to January 2000, then Chairman of the Scientific Affairs sub-committee from January 2000 to June 2002, thereafter member of the Conference Organizing Committee)
3. Chairman of the 2009 Asian-Pacific Network of Centers for Earthquake Engineering Research Workshop, Urbana, Illinois, August 2009
4. Co-editor, GeoMEast International Conference, Sharm Elsheikh, July 2017

### External Committees

1. Member of the three-person Steering and Selection Committee for the Italian Civil Defense Agency for Research in Earthquake Risk (GNDT), 1999-2004
2. Member of the Board of Directors of the International School of Reduction of Seismic Risk (Rose), Pavia, Italy, 2000-present
3. Member of the University Engineering Advisory Committee, University of Hong Kong, 2010-2012
4. External assessor of the CEE Department at Florida International University, USA, 2010
5. Member of the external assessment panel of the School of CE and Environmental Science at University of Florida, Gainesville, USA, 2011
6. Member of the external assessment panel of the Royal Commission of Jubail and Yanbo' University and Technical Institutes in Jubail, Kingdom of Saudi Arabia, 2011
7. Member of the external assessment panel for the CEE Department at the University of Toronto, 2012

8. Member of the external assessment panel for the CEE Department at the University of British Columbia, 2012

## **Technical and Professional Service**

### **Professional Societies**

1. The Royal Academy of Engineering, UK, Fellow, 2000 onwards
2. European Association of Earthquake Engineering, First Vice President, 1998 - 2002
3. European Association of Earthquake Engineering, Executive Comm. Member, 1994 - 2001
4. European Association of Earthquake Engineering, UK Delegate, 1994 - 2001
5. American Society of Civil Engineers, USA, Fellow, 1997 -
6. Society of Earthquake and Civil Engineering Dynamics, (SECED), (ICE-affiliated), UK, Chairman, 1992 - 1994
7. Society of Earthquake and Civil Engineering Dynamics, (SECED), (ICE-affiliated), UK, Vice-Chairman, 1990 - 1992
8. Society of Earthquake and Civil Engineering Dynamics, (SECED), (ICE-affiliated), UK, Committee Member 1985 - 1995
9. International Association of Earthquake Eng., Deputy UK Delegate, 1992 - 2001
10. Structural Stability Research Council, USA, Member-at-Large, 1990 -
11. British Computer Society, UK, Member, 1989 - 1993
12. Earthquake Engineering Research Inst., USA, Member, 1989 -
13. Institution of Structural Engineers, UK, Fellow, 1989 -
14. Engineering Council, UK Member, 1989 -
15. Applied Technology Council-63, Steering Committee Member, 2005 - 2007
16. Applied Technology Council-58, Panel Review Member, 2006 - 2008
17. Asian-Pacific Network of Centers for Earthquake Engineering, President, 2007 - 2009
18. Member of the Board of Directors of the Institution of Structural Engineers, UK, 2012 - onwards
19. Chi Epsilon, Civil Engineering Honors Society, Honorary Life Member, 2011
20. Life Member of the Penn State University Alumni Society, 2015

### **CEE at Illinois**

1. Awards Committee, Member, 2004 - 2006
2. New Faculty Search Committee, Chairman, 2006
3. Ad Hoc Committee, Promotions and Tenure, Chairman, 2004 and 2008
4. Promotions and Tenure Committee member, 2003 and 2009 (single years in each occasion)

### **College of Engineering at Illinois**

1. College Promotion and Tenure Committee, 2011-2014
2. Named Recognitions Committee, Member, 2011
3. College of Engineering Working Group on Faculty Startups, Member, 2009
4. Council on Global Engineering Initiatives, Chairman, 2008-2009.
5. Dean's Committee on Global Engineering, Chairman, 2012

### **University of Illinois**

1. Chair of search committee for founding director of the Institute of Energy and Environment
2. Member, University Overheads Distribution Model committee

### **Penn State University**

1. Chair, search committee for dean of Eberly College of Science, 2015
2. Chair, Campus committee on strategic thrust 'Managing Resources', 2014-2015

3. Chair, STEM Deans committee on Inclusive Penn State, 2015
4. Member, Case Statement Committee for PSU undraising compaing (2016-2021), 2015 to present
5. Member, Health Sciences Council, 2014 to present
6. Mmeber, steering committee of the Huck Institute of Life Sciences, and Institutes for Energy and Environment
7. Member, strategy committee for Institute for Natural Gas Research

### **External Service**

1. CEN EC8 Drafting Panel (Repair and Redesign) Member, PT4 2000 - 2002
2. CEN EC8 Drafting Panel (Action, RC, Steel etc), Member, PT1, 1999 - 2002
3. Council of Ministers, Min. Civil Defense, Italy, Technical Expert, 1999 - 2001
4. Ministry of Housing and Construction, Egypt, Member of Code Drafting Committees, 1999 - 2004
5. Federation Internationale de Beton (FIB), Member, SD Commission, 1999 - 2006
6. Comite Euro-Internationale de Beton (CEB), Member, TG13, 1992 - 1998
7. International Decade for Natural Hazard Reduction Earthquake Working Group, Member, 1992 - 1996
8. Working Group on Seismic Design of Composite Structures, JRC, Ispra, Italy, Member, 1992 - 1996
9. International Standards Organization (ISO), Corresponding Member, 1996 - 2001
10. Japan-UK Seismic Risk Forum, Founder/Director, 1995 - 2004
11. World Federation of Engineering Organizations, Project B on Buildings, Member, 1992 - 1994
12. British Standards Committee B/525/8, Technical Co-coordinator, 1991 - 2001
13. CEN Sub-committee 8, National Tech. Contact, 1991 - 2001
14. European Convention for Constructional Steel, UK Representative, 1991 - 2001
15. Illinois Seismic Safety Task Force, Member, 2008 - 2010
16. Member of University Advisory Committee, Hong Kong University, Hong Kong, 2011 to present
17. Member of the Onsite Proposals Assessment Committee, Universities Research Council of Hong Kong, 2012-2016 (ongoing)
18. Member of the Public Policy Committee of the American Society for Engineering Eduction, USA, 2016-
19. Chair of the Commonwealth of Pennsylvania Engineering Deans Committee, 2016-2017