
MAHMOUD REDA TAHA, PH.D., P. ENG.

Professor and Regents' Lecturer
Department of Civil Engineering
University of New Mexico
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RANK AND TITLES

Professor of Civil Engineering and Regents' Lecturer,
Department of Civil Engineering, University of New Mexico (2012 – Present)
Director of Graduate Programs,
Department of Civil Engineering, University of New Mexico (2010 – 2012)

CROSS DEPARTMENTAL APPOINTMENTS

Biomedical Engineering Center (2012 – Present)
Department of Mechanical Engineering, UNM (2007 – Present)
Department of Electrical and Computer Engineering, UNM (2005 – Present)

PERSONAL INFORMATION

Birth date: April 20, 1971
Citizenship: Canadian and Egyptian Citizen and Permanent Resident of the USA
Marital Status: Married with two children

FORMAL EDUCATION

Ph.D., Civil Engineering, The University of Calgary, Calgary, Canada, 2000
M.S., Structural Engineering, Ain Shams University, Cairo, Egypt, 1996
B.S., Structural Engineering, Ain Shams University, Cairo, Egypt, 1993 (Honors)

OTHER APPOINTMENTS

Visiting Professor, July 2012, Sejong University, Seoul, South Korea
Visiting Professor, 2012-2013, American University of Sharjah, Sharjah, United Arab Emirates

PROFESSIONAL APPOINTMENTS

University of New Mexico, Albuquerque, New Mexico, USA
Director of Graduate Programs, Department of Civil Engineering, University of New Mexico,
Albuquerque, NM, USA, September 2010 – 2012.
Materials and Structural Engineering Laboratory Director/Manager, Department of Civil Engineering,
University of New Mexico, Albuquerque, NM, USA, 2008 – Present.
Tenured Associate Professor and Regents' Lecturer, Department of Civil Engineering, University of New
Mexico, Albuquerque, NM, USA, June 2010 – June 2012.
Tenure Track, Associate Professor & Regents' Lecturer, Department of Civil Engineering, University of
New Mexico, Albuquerque, NM, USA, June 2008 – June 2010.
Tenure Track, Assistant Professor of Structural Engineering, Department of Civil Engineering,
University of New Mexico, Albuquerque, NM, USA, December 2003 – May 2008.

Structural Consultant, Calgary, Canada

Structural Engineer, Stantec Consulting Ltd., Calgary, Canada, June 2000 – December 2003.
Structural Engineer, Campbell Woodall and Assoc., Calgary, Canada, June 1999 – June 2000.

University of Calgary, Calgary, Canada

Research Associate, Department of Civil Engineering/Department of Geomatics Engineering, The
University of Calgary, Calgary, Canada, 1999 – 2003.
Research and Teaching Assistant, Department of Civil Engineering, The University of Calgary, Calgary,
Canada, 1996 – 1999.

Ain Shams University, Cairo, Egypt

Teaching Assistant/Associate Lecturer, Structural Engineering Department, Ain Shams University, Cairo, Egypt, 1994 – 1996.

HONORS AND AWARDS

- STC.UNM Award for Issue Patent in 2012, May 2013.
- American Concrete Institute (ACI) Walter P. Moore Jr. Faculty Achievement Award, American Concrete Institute, March 2010.
- UNM School of Engineering, Junior Faculty Research Excellence Award, University of New Mexico, May 2010.
- UNM Regents' Lecturer, This is the most prestigious award bestowed on a junior faculty at University of New Mexico, 2007.
- Stamm Endowed Lectureship for Outstanding Faculty Performance, Department of Civil Engineering, University of New Mexico, 2007.
- New Mexico Professional Engineers (NMPE) Service Award, 2007.
- Sigma-Xi Young Investigator Award, Sigma-Xi University of New Mexico Chapter, 2007.
- Egypt State Award (ESA), Academy of Scientific Research, Cairo, Egypt 2005.
- Oak Ridge Associated Universities (ORAU), Ralph E. Powe Junior Faculty Enhancement Award, 2004.
- Institute of Navigation (ION) Best Paper/Presentation Award, for research on Fuzzy Logic for Positioning Research, Portland, Oregon, USA, 2003.
- H.W.H. West, Special Recognition Award, 9th Canadian Masonry Symposium, Fredericton, Canada, 2001.
- Best PhD Thesis, Department of Civil Engineering, University of Calgary, Canada, 2000.
- Egyptian Government Scholarship for top listed students, 1988 – 1993.
- Dean's List, Ain Shams University, Cairo, Egypt, 1988 – 1993.

AWARDS FOR RESEARCH TEAM

- Jalalpour, M., Best Graduate Student Award, Department of Civil Engineering, UNM, 2012.
- Fan, T., Best Graduate Student Award, Sigma-Xi, UNM Chapter, 2011.
- Soliman, E., Best Graduate Student Award, Department of Civil Engineering, UNM, 2011.
- Foley, E., SRA Award, Defense Threat Reduction Agency (DTRA), 2010.
- Grahn, R., Appointed to Los Alamos National Laboratory Summer School, 2010.
- Neidigk, S., Appointed to Los Alamos National Laboratory Summer School, 2009.
- Azarbajani, M., Sigma-Xi Research Award, 2009.
- Garner, A., SRA Award, Defense Threat Reduction Agency (DTRA), 2008.
- Kim, J., Best Paper Award, 5th ASCE Int. Eng. & Const. Conference (IECC'5), Irvine, CA, 2008.
- Salas, C., NSF-IGERT Fellowship on Nano-Materials, 2008.
- Reinhardt, A., SRA Award, Defense Threat Reduction Agency (DTRA), 2007.
- Meshgin, P., New Mexico Society of Professional Engineers' Scholarship, 2007.
- Azarbajani, M., School of Engineering Scholarship, UNM 2006.
- McCuskey, M., Received NSF Scholarship, April 2006.
- McCuskey, M., Structural Engineering Foundation Scholarship, Illinois, 2006.
- McCuskey, M., Appointed to Los Alamos National Laboratory Summer School, 2006.
- Sheyka, M., Sigma Xi Superior Undergraduate Award, 2006.
- McCuskey, M., Outstanding Senior Student Civil Engineering Department, UNM 2006.
- Schnalzer, R., SRA Award, Defense Threat Reduction Agency (DTRA), 2005.
- Sheyka, M., SRA Award, Defense Threat Reduction Agency (DTRA), 2005.
- McCuskey, M., UNM President's Award, Undergraduate Research Symposium, 2005.
- Sheyka, M., Tom Cummings' Engineering Award, Undergrad Research Symposium, 2005.
- McCuskey, M., School of Engineering Award, Undergraduate Research Symposium, 2005.

TEACHING ACTIVITIES

Courses numbered 100–400 are primarily undergraduate classes

Courses numbered 500 are primarily graduate classes

COURSES TAUGHT AT UNM FOR THE LAST 8 YEARS

1. CE 302 Mechanics of Materials, 2005
2. CE 305 Civil Engineering Materials, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011
3. CE 310 Structural Design, 2012
4. CE 411/511 Design of Concrete Structures, 2006, 2007, 2009, 2010
5. CE 424/524 Design of Structural Steel using LRFD, 2004, 2005, 2006, 2007, 2008
6. CE 506 Prestressed Concrete Design, 2006, 2010
7. CE 548 Fuzzy Logic with Engineering Applications, 2005
8. CE 598FRP Design of Concrete Structures Reinforced and Strengthened using FRP, 2004, 2012
9. CE 598WM Design of Wood and Masonry Structures, 2008
10. CE 598FM Fracture Mechanics of Engineering Materials, 2009, 2011

NEW COURSES DEVELOPED

1. CE 598FRP Design of Concrete Structures Reinforced and Strengthened using FRP, 2004, 2012.
2. CE 598WM Design of Wood and Masonry Structures, 2008.
3. CE 598FM Fracture Mechanics of Engineering Materials, 2009, 2011.

TEACHING EVALUATIONS FROM STUDENTS**ICES RATINGS****(Scores are out of Possible 6.0)**

#	Semester	Course-Section	# of students	ICES-Evaluation Summary	
				Rate the Course	Rate the Instructor
1	Spring 2004	CE 424 - Design of Metallic Structures	7	5.6	5.7
2	Spring 2004	CE 524 - Design of Metallic Structures	1	6.0	6.0
3	Fall 2004	CE 598 - Design of FRP Structures	6	5.0	5.5
4	Fall 2004	CE 305 - Civil Engineering Materials	27	4.7	5.0
5	Spring 2005	CE 424 - Design of Metallic Structures	5	5.0	4.3
6	Spring 2005	CE 524 - Design of Metallic Structures	3	5.0	5.7
7	Spring 2005	CE 548 - Fuzzy Logic w. Applications	8	5.5	5.5
8	Spring 2005	CE 302 - Mechanics of Materials	20	5.3	5.5
9	Fall 2005	CE 305 - Civil Engineering Materials	23	5.2	4.8
10	Spring 2006	CE 691 - Civil Engineering Seminar	18	N/A	N/A
11	Spring 2006	CE 424 - Design of Metallic Structures	5	5.3	5.0
12	Spring 2006	CE 524 - Design of Metallic Structures	4	5.8	5.5
13	Fall 2006	CE 305 - Civil Engineering Materials	26	5.0	5.1
14	Fall 2006	CE 411 - Design of Concrete Structures	9	5.5	5.7
15	Fall 2006	CE 511 - Design of Concrete Structures	3	5.0	5.7
16	Spring 2007	CE 424 - Design of Metallic Structures	3	6.0	6.0
17	Spring 2007	CE 524 - Design of Metallic Structures	5	5.6	5.6
18	Fall 2007	CE 411 - Design of Concrete Structures	9	5.0	4.8
19	Fall 2007	CE 511 - Design of Concrete Structures	3	5.0	5.5
20	Fall 2007	CE 305 - Civil Engineering Materials	43	5.4	5.5
21	Spring 2008	CE 598 - Design of Wood and Masonry	9	5.0	5.5
<i>Mean value (out of 6.0 maximum)</i>				5.3 (88.5%)	5.4(89.7%)

IDEA RATINGS		(Scores are out of Possible 5.0)			
#	Semester	Course-Section	# of students	IDEA Summary	
				Rate the Course IDEA	Rate the Instructor IDEA
22	Fall 2008	CE 305 - Civil Engineering Materials	47	3.9	4.2
23	Spring 2009	CE 411 - Design of Concrete Structures	10	5.0	4.9
23	Spring 2009	CE 511 - Design of Concrete Structures	10	5.0	5.0
24	Spring 2009	CE 598 - Fracture Mechanics	12	4.0	4.8
25	Fall 2009	CE 305 – Civil Engineering Materials	44	4.1	4.5
26	Spring 2010	CE 411 – Design of Concrete Structures	4	5.0	5.0
27	Spring 2010	CE 511 – Design of Concrete Structures	6	4.0	4.2
28	Fall 2010	CE 305 – Civil Engineering Materials	45	4.1	4.4
29	Fall 2010	CE 506 – Prestressed Concrete Design	13	4.6	4.8
30	Spring 2011	CE 598 – Fracture Mechanics	14	4.6	4.9
31	Fall 2011	CE 305 – Civil Engineering Materials	40	4.3	4.7
32	Spring 2012	CE 310 – Structural Design	20	---	---
33	Spring 2012	CE 598 – RC Design with FRP	7	4.9	4.9
<i>Mean value (out of 5.0 maximum)</i>				4.4 (88.6%)	4.7 (93.4%)

SUPERVISION ACTIVITIES

Graduate Supervisor of (Total of 31 students – 23 graduated: 17 MS & 6 PhD)

#	Advisee	Degree	Year	Department	Gender
1	S. Horton	MSc	2006	Civil Engineering	M
2	E. Altunok	MSc	2006	Electrical Comp. Eng	M
3	P. Meshgin	MSc	2006	Civil Engineering	F
4	M. McCuskey	MSc	2007	Civil Engineering	F
5	G.B. Farfan	MSc	2008	Electrical Comp. Eng	M
6	M.P. Sheyka	MSc	2008	Civil Engineering	M
7	C. Salas	MSc	2008	Mech. Engineering	F
8	R. Zaragoza	MSc	2009	Civil Engineering	M
9	J.J. Kim	PhD	2009	Civil Engineering	M
10	A. Reinhardt	MSc	2009	Civil Engineering	M
11	M. Azarbayejani	PhD	2009	Civil Engineering	M
12	C. Murray	MSc	2010	Civil Engineering	M
13	A. Garner	MSc	2011	Civil Engineering	M
14	R. Grahn	MSc	2011	Civil Engineering	M
15	J. Hayes	MSc	2011	Civil Engineering	M
16	E. Foley	MSc	2011	Civil Engineering	F
17	R. Schnalzer	MSc	2011	Civil Engineering	M
18	M. Grigoriev	MSc	2011	Mech. Engineering	M
19	M.P. Sheyka	PhD	2011	Mech. Engineering	M
20	E. Soliman	PhD	2011	Civil Engineering	M
21	T. Fan	PhD	2012	Civil Engineering	M
22	M. Jalalpour	PhD	2012	Civil Engineering	M
23	S. Abobakr	MSc	2013	Civil Engineering	M
24	A. Griffin	MSc	Exp. 2013	Civil Engineering	M
25	S. Daghash	MSc	Exp. 2013	Civil Engineering	M
26	C. Salas	PhD	Exp. 2013	Biomedical Eng.	F
27	S. Neidgik	MSc	Exp. 2013	Civil Engineering	M
28	M. Peterson	MSc	Exp. 2013	Civil Engineering	M
29	M. Begaye	MSc	Exp. 2014	Civil Engineering	F
30	J. Brantley	MSc	Exp. 2014	Biomedical Eng.	M
31	S. Abobakr	PhD	Exp. 2017	Civil Engineering	M

Supervisor for the following PhD Dissertations and MS Theses

PhD Dissertation (6 Complete)

- 1- Kim, J.J., Uncertainty Quantification in Serviceability of Reinforced Concrete Structures, 2009 (Distinction).
- 2- Azarbajehani, M., Optimal Sensor Network for Efficient Structural Health Monitoring with Field Application to A Reinforced Concrete Bridge on I-40, 2009 (Distinction).
- 3- Soliman, E. Next Generation Fiber Reinforced Composites Incorporating Carbon Nanotubes, November 2011 (Distinction).
- 4- Sheyka, M., A Homogenization Approach for Design and Simulation of Blast Resistant Composites, November 2011 (Distinction).
- 5- Fan, T., Concrete Microstructure Homogenization Technique with Applications to Model Concrete Serviceability, March 2012.
- 6- Jalalpour, M., Structural Health Monitoring of Bolted Joints Using Ultrasonic Signals and Thermal Resistance, April 2012 (Distinction).

MS Thesis (17 Complete)

- 1- Horton, S., A Neural Wavelet Module for Intelligent Damage Detection in SHM, 2006.
- 2- Altunok, E., Fuzzy and Possibility Methods for Damage Detection in Structural Health Monitoring, 2006.
- 3- Meshgin, P., Creep of Epoxy at the Concrete-Fiber Reinforced Polymer (FRP) Interfaces, 2007.
- 4- McCuskey, M., Structural Damage Classification using Optimization of a Neural-Wavelet Module and Possibility Fusion, 2007 (Distinction).
- 5- Farfan, B., Optimization of Photonic Crystals: Methods and Applications, 2008 (Distinction).
- 6- Salas, C., A Biomechanical Comparison of Locking Plates Contrasted with Conventional Treatment of Distal Femur Fracture, 2008 (Distinction).
- 7- Sheyka, M., Analytical and Experimental Investigations of Photonic Crystals for Sub-Micron Damage Detection, 2008 (Distinction).
- 8- Zargoza, R., Review of Design of Cold Formed Steel Stud Walls (Project), 2009.
- 9- Reinhardt, A., Macro and Nanoscale Creep of Self-Consolidating Concrete, 2009 (Distinction).
- 10- Murray, C., Analysis of Wood Shear Walls Using Linear Elastic FE Method (Project), 2010.
- 11- Schnalzer, R., Acoustic Bandgap Sensors for Hot Spot Damage Monitoring, 2011.
- 12- Hayes, J., Short and Long Term Properties of Self Consolidating Concrete (SCC), 2011.
- 13- Grahm, R., Creep and Fracture of Self Consolidating Concrete Incorporating Fly Ash, 2011.
- 14- Foley, E., Synthesis and Nano-mechanical Characterization of Calcium Silicate Hydrates (CSH), 2011 (Distinction).
- 15- Garner, A., Strengthening of RC Slabs Using a Combination of CFRP and UHPC, 2011 (Distinction).
- 16- Girgoriev, M.M., Manufacturing Thin Composite Laminates for High Strain Testing and Nonlinear Elastic Constitutive Modeling, 2011.
- 17- Aboubakr, S. H., Epoxy-Clay Nanocomposite for Carbon Fiber Reinforced Polymer Applications using Nanoclay, 2013.

Member of the Supervising Committee of (Total of 24 students)

#	Advisee	Degree	Year	Department	Main Supervisor
1	J. Brown	PhD	2004	Civil Engineering	A. Maji
2	D. Harp	MSc	2005	Civil Engineering	J. Stormont
3	Y. Lee	MSc	2006	Civil Engineering	W. Gerstle
4	G. Urgessa	PhD	2006	Civil Engineering	A. Maji
5	J. Robbins	PhD	2006	Mech. Engineering	T. Khraishi
6	G. Chavez	PhD	2007	Civil Engineering	T. Ross
7	P. Sridhar	PhD	2007	Electrical Comp. Eng.	M. Jamshidi
8	J.E.A. Gonzalez	MSc	2007	Civil Engineering	W. Gerstle
9	S. McEntire	PhD	2008	Mech. Engineering	Y.L. Shen
10	M. Higgins	PhD	2008	Electrical Comp. Eng.	C. Christodoulou
11	C. Ortega	MSc	2008	Civil Engineering	W. Gerstle
12	M.F. Su	PhD	2008	Electrical Comp. Eng.	C. Christodoulou
13	J. Baranes	MSc	2008	Civil Engineering	A. Maji
14	R. Rammohan	PhD	2010	Computer Science	J. Luger
15	N. Xu	PhD	2011	Electrical Comp. Eng.	C. Christodoulou
16	B. Vernon	MSc	2011	Civil Engineering	A. Maji
17	A. Harnovar	MSc	2011	Civil Engineering	A. Maji
18	S. Chapman	MSc	2011	Civil Engineering	W. Gerstle
19	A. Rahman	MSc	2012	Civil Engineering	W. Gerstle
20	H. Sobien	MSc	2012	Civil Engineering	R. Tarefder
21	A. Carbera	MSc	2012	Civil Engineering	R. Tarefder
22	E. Zuraiqi	PhD	2012	Electrical Comp. Eng.	C. Christodoulou
23	M. Neidigk	PhD	2012	Mech. Engineering	Y.L. Shen
24	A. Torres	PhD	2013	Civil Engineering	A. Maji

Member of PhD qualifying Exam Committee of (Total of 6 students)

#	Advisee	Exam Year	Department	Main Supervisor
1	A. Zaman	2007	Civil Engineering	R. Tarefder
2	X. Xion	2009	NSMS Program	J. Brinker
3	E. Peterson	2009	NSMS Program	A. Datye
4	Y. Qiu	2010	Civil Engineering	A. Maji
5	A. Youssefi	2010	Civil Engineering	T. Ross
6	A. Montoya	2011	Civil Engineering	T. Ross

Member of Supervising Committee – Other Academic Institutions (Invited)

Mona Ahmed, MS (Chemistry) – Advisor: Drs. U. F. Kandil, Ain Shams University, Cairo, Egypt, 2012-Present.

Gelan, E, PhD (Environmental Architecture) – Co-Advisor: A. Smarka, American Century University (ACU), California, USA, 2011.

Sadek, R., PhD (Civil Engineering) – Co-Advisor: A. Smarka, American Century University (ACU), California, USA, 2013.

Member of Examining Committee – Other Academic Institutions (Invited)

Osman, N.Y., PhD (Civil Engineering) – Advisor: Kerry McManus, Swinburne University of Technology, Victoria, Australia, 2007.

AlShamsi, Ghaith Abdelrahman, MS (Civil Engineering) – Co-Advisor: M. AlHamaydah, American University of Sharjah, United Arab Emirates, 2013.

Supervisor for the following undergraduate students for research (Total of 13 students)

#	Advisee	Degree	Year	Dept/Final Degree/Year	Gender
1	M. Sheyka	BSc	2006	Mechanical Eng. PhD (2011)	M
2	M. McCuskey	BSc	2006	Civil Eng. MS(2007)	F
3	Z. Williams	BSc	2007	Civil Eng. BS(2007)	M
4	A. Reinhardt	BSc	2007	Civil Eng. MS(2009)	M
5	R. Schnalzer	BSc	2006	Civil Eng. MS(2011)	M
6	B. Garner	BSc	2009	Civil Eng. MS(2011)	M
7	E. Foley	BSc	2009	Civil Eng. MS(2011)	F
8	J. Hayes	BSc	2009	Civil Eng. MS(2011)	M
9	R. Grahn	BSc	2009	Civil Eng. MS(2011)	M
10	M. Dunlap	BSc	2012	Civil Eng. BS. (2012)	M
11	D. Bonham	BSc	2012	Civil Eng. BS. (2012)	M
12	S. Neidigk	BSc	2009	Civil Eng. MS (In progress)	M
13	M. Begaye	BSc	2013	Civil Eng. MS (In progress)	F

Supervisor of the following High Qualified Personnel (Total of 8 Fellows)

#	Post-doctor	Graduating school	Period
1	J. Lucero	PhD, University of New Mexico, USA	2004– 2004
2	S. Taheri	PhD, University of New Mexico, USA	2005 – 2005
3	I. Adam	PhD, Okayama University, Japan	2006 – 2006
4	K.K. Choi	PhD, Seoul National University, Korea	2005 – 2007
5	U. Kandil	PhD, Penn State University, USA	2010 –2010
6	J.J. Kim	PhD, University of New Mexico, USA	2009 –2012
7	A. B. Colak-Altunc	PhD, Arizona State University, USA	2008 –2011
8	E. Soliman	PhD, University of New Mexico, USA	2011 –2012

PUBLICATIONS

PUBLICATION STATISTICS

Number of **papers published/accepted for publication: 226**

Number of Special Publications: 6

Number of Journal articles published/accepted: 97

Number of articles in refereed conference proceedings: 123

Number of patents: **2 (3 pending)**

Number of technical reports: 7

Number of Refereed Medical Abstracts: **10**

Number of citations (Web of Science Citation Report): **713**

h index (Google Scholar Citation Report – February 2013) : **16**

★ Indicates trainee co-authors

PATENTS

Low-Profile, High Tension Mesh Plate for Subcutaneous Fracture Fixation, Rise, L., Salas, C., Dickens, A. and Reda Taha, M.M., Provisional Patent Filed, April 2013.

Break-away Coupling with Enhanced Fatigue Properties for Highway or Roadside Appurtenances, Dinitz, A. M., Stenko, M. S. and Reda Taha, M.M., Patent Filed, April 2012.

System and Methods for Risk Analysis Investment Decision Support Plus (UNM-0940). Gilfeather, F., Caudell, T., Reda Taha, M.M., Mann, G., Ross, T., Vergara, V. and Weinberg, D., Patent Filed, December 2010.

Generation of Polymer Concrete Incorporating Carbon Nanotubes, Reda Taha, M.M., Kandil, U. and Soliman, E. US Patent # 8,426,501 B1, April 23, 2013.

Method for Making Multi-Scale Carbon-Carbon Structures for Use in Composites. Al-Haik, M., Luhrs, C., Philips, J. and Reda Taha, M.M., US Patent # 8,277,872, Oct. 2, 2012.

SPECIAL PUBLICATIONS

ACI Special Publication on *Frontiers on Polymers in Concrete*. (ACI, SP-278), Guest Editor: Reda Taha, M.M. March 2011.

ACI Special Publication on *Nanotechnology of Concrete: The Next Big Thing is Small*. (ACI, SP-267), Guest Editors: Sobolev, K. and Reda Taha, M.M. 2009.

International Journal of Material & Structural Integrity, Special Issue on Nanotechnology for Structural Materials. Guest Editors: Reda Taha, M.M. and Al-Haik, M., Vol. 3, No. 2/3, 2009, pp. 99-260.

Journal of Smart Structures & Systems, Special Issue on *Current Advances of Structural Health Monitoring*, Guest Editors: Reda Taha, M.M. and Mosallam, A. Techno Press, Vol. 5, No. 4, July 2009, pp. 317-495.

Reda Taha, M.M. and Shrive, N.G. "Effect of Creep on New Masonry Structures", Chapter 4, Learning from Failure, Long-Term Behavior of Heavy Masonry Structures, Binda, L. Editor, *WIT Press, South Hampton, UK, 2007*, pp. 83-105.

Proceedings of the International Conference on Performance of Construction Materials in The New Millennium, ICPCM, Cairo, Egypt 2003, El-Dieb, A.S., Reda Taha, M.M. and Lissel, S. L., Editors, Vols. 1 and 2, ISBN:977-237-192/193.

Refereed Journal Articles (Published and Accepted for Publication)

2013

- Jalalpour, M., Kim, J., and Reda Taha, M.M. “Monitoring of L-shape bolted joint tightness using thermal contact resistance”, *Experimental Mechanics*, In press 2013.
- Choi, K.-K. and Reda Taha, M.M. “Rheological Modeling and Finite Element Simulation of Epoxy Adhesive Creep in FRP-strengthened RC Beams”, *Journal of Adhesion Science and Technology (JAST)*, Vol. 27, No. 5-6, pp. 523-535, DOI: 10.1080/01694243.2012.687557, 2013.
- Kim, J. J., Reda Taha, M.M., Noh, H-C., Ross, T. J. “Reliability Analysis to Resolve Difficulty in Choosing from Alternative Deflection Models of RC Beams”, *Mechanical Systems and Signal Processing*, Vol. 37, pp. 240-252, 2013.
- Kim, J. J., H-C, Noh, Reda Taha, M.M., Mosallam, A. “Establishing Design Limits for RC Slabs Strengthened with Hybrid FRP-HPC Retrofit System”, *Journal of Composites. Part B: Engineering*, Vol. 51, pp. 19-27, DOI: 10.1016/j.compositesb.2012.12.012, 2013.
- Kim, J. J., Foley★, E., Reda Taha, M.M. “Nano-Mechanical Characterization of Synthetic Calcium-Silicate-Hydrate (C-S-H) with varying CaO/SiO₂ Mixture Ratios”, *Cement & Concrete Composites*, Vol. 36, pp. 65-70, DOI: 10.1016/j.cemconcomp.2012.10.001, 2013.

2012

- Kim, J. J., Rahman, M. and Reda Taha, M.M. “Examining Microstructural Composition of Hardened Cement Paste Cured Under High Temperature and Pressure Using Nanoindentation and 29Si MAS NMR”, *Journal of Applied Nanoscience*, Vol. 2, No. 4, pp. 445-456, DOI: 10.1007/s13204-012-0058-z, 2012.
- Sheyka★, M., Altunc, A. B., and Reda Taha, M.M. “Multi-Objective Genetic Topological Optimization for Design of Blast Resistant Composites”, *Applied Composite Materials*, Vol. 19, No. 5, pp. 785-798, DOI: 10.1177/0021998311422456, 2012.
- Soliman★, E., Al-Haik, M., Reda Taha, M.M. “On and off-axis tension behavior of fiber reinforced polymer (FRP) composites incorporating multi-walled carbon nanotubes”, *Journal of Composite Materials*, Vol. 46, No. 14, pp. 1661–1675. 2012.
- Kim, J.J., Noh, H-C., Reda Taha, M.M. “Flexural failure design criteria for retrofitted RC slabs using FRP-UHPC hybrid system”, *Journal of Korean Society of Advanced Composite Structures*, Vol. 3, No. 2, 2012 (In Korean).
- Foley★, E., Kim, J. J. and Reda Taha, M.M. “Synthesis and Nano-Mechanical Characterization of Calcium-Silicate-Hydrate (C-S-H) made with 1.5 CaO/SiO₂ ratio”, *Cement and Concrete Research*, Vol. 42, pp. 1225-1232. 2012.
- Cheema, T., Salas★, C., Morrell, N., Lansing, L., Reda Taha, M.M., Mercer, D., “Opening Wedge Trapezial Osteotomy as Possible Treatment for Early Trapeziometacarpal Osteoarthritis: A Biomechanical Investigation of Radial Subluxation, Contact Area, and Contact Pressure”, *Journal of Hand Surgery*, Vol. 37A, pp. 699-705. 2012.
- Soliman★, E., Kandil, U. F., Reda Taha, M.M. “The Significance of Carbon Nanotubes on Styrene Butadiene Rubber (SBR) and SBR Modified Mortar”, *Materials and Structures*, Vol. 45, No. 6, pp. 803-816. 2012.
- Soliman★, E., Sheyka, M. and Reda Taha, M.M. “Low Velocity Impact of Thin Woven Carbon Fabric Composites Incorporating Multi-Walled Carbon Nanotubes”, *International Journal of Impact Engineering*, Vol. 47, pp. 39-47. 2012.
- Kim, J. J., Fan★, T. and Reda Taha, M.M. “Quantifying Deflection Variation in RC Beams Propagated from Microstructural Variability in Concrete using Homogenization Technique”, *ACI Special*

Publication- SP-284, Andy Scanlon Symposium on Serviceability and Safety of Concrete Structures, 10 p. 2012.

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Reda Taha, M.M. and Hassanain, M.A. “Effect of variation of concrete properties on the accuracy of estimated deflection of reinforced concrete slabs”, In *Proceedings of the Annual Conference of Canadian Society of Civil Engineering (CSCE)*, Victoria, May 2001.

Reda Taha, M.M. “Examining Bond Strength of Latex Modified Concrete”, In *Proceedings of the 10th International Congress on Polymers in Concrete (ICPIC)*, Honolulu, Hawaii, USA, May 2001, 12 p.

2000

El-Dieb, A.S. and Reda Taha, M.M. “Corrosion of Reinforcing Steel in Relation to High Performance Concrete (HPC) Cover Thickness and Quality”, In *Proceedings of the International Symposium on High Performance Concrete: Workability, Strength, and Durability*, Hong Kong and Shenzhen University, China, 2000, Vol. 2, pp. 195–200.

Shrive, N.G., Reda, M.M., and Huizer, A. “Simple Design Procedures for Masonry Arches”, In *Proceedings of the 12th International Brick/Block Masonry Conference*, Madrid, Spain, 2000, Vol. 3, pp. 1687–1696.

Reda, M.M. and Shrive, N.G. “Is Cellular Mortar Suitable for The Canadian Environment?”, In *Proceedings of the 12th International Brick/Block Masonry Conference*, Madrid, Spain, 2000, Vol. 3, pp. 1697–1706.

1998

Reda, M.M. and Shrive, N.G. “A New Ultra High Performance Concrete Using Micro Carbon Fibers”, In *Proceedings of the 12th CSCE Annual Conference*, Halifax, Canada, June 1998, pp. 329–338.

1997

Reda, M.M., Sayed-Ahmed, E.Y. and Shrive, N.G. “Towards a New Non-Metallic Anchorage System for Post-Tensioned Applications With Carbon Fibre Reinforced Plastic Tendons”, In *Proceedings of the 42nd International SAMPE Symposium*, Anaheim, USA, 1997, pp. 288–297.

Reda, M.M., Sayed-Ahmed, E.Y. and Shrive, N.G. “Advanced Composite Materials for Post-Tensioning Applications: Merits, Shortcomings and Possibilities”, In *Proceedings of the First International Conference on Engineering Materials*, Ottawa, Canada, Vol. 1, No. 21, 1997.

Okba, S.H., Shaker, F.A. and Reda, M.M. “Latex Modified Concrete Using Locally Produced Latexes”, In *Proceedings of the 7th (ICSGE) International Colloquium on Structural and Geo-technical Engineering*, Cairo, Egypt, 1997, Vol. 2, pp. 461–470.

Refereed Medical Abstracts with Poster/Podium Presentations

2013

Salas★ C, Mercer D, O’Mahoney G, Love J, Reda Taha M., Moneim M. “Biomechanical study investigating partial trapeziectomy with local soft tissue interposition as potential treatment for trapeziometacarpal osteoarthritis”. 59th Annual Meeting of the Orthopaedic Research Society, January 2013, Podium Presentation.

2012

Salas★ C, Reda Taha M., DeCoster T, Hoopes D. “Finite element design and experimental testing of a novel triangular external fixator configuration for tibial shaft fracture treatment”. Biomedical Engineering Society Annual Meeting, October 2012, Poster Presentation

2010

Mercer, D., Salas★, C., Love, J., Lansing, L., Medoro, A., Reda Taha, M.M., and Cheema, T. “Simulated Osteotomy of the Trapezium Reduced Radial Subluxation and Improves Contact Pressure Distribution Across the Thumb Carpometacarpal Joint in Lateral Pinch” Proceedings of the ASME 2010 Summer Bioengineering Conference, SBC2010, June 2010, Naples Grande Beach Resort, Naples, Florida, USA

Salas★, C., Mercer, D., DeCoster, T. and Reda Taha, M.M., “Experimental and Probabilistic Finite Element Analysis of Distal Femoral Fractures: A Comparison of Locking Plate Versus Intermedullary Nail Fixation” Proceedings of the ASME 2010 Summer Bioengineering Conference, SBC2010, June 2010, Naples Grande Beach Resort, Naples, Florida, USA

Salas★, C., Reda Taha, M.M., DeCoster, T. and Mercer, D. “Probabilistic Failure Analysis of Locking Compression Plating vs. Intramedullary Nailing for Treatment of Distal Femur Fractures”, 18th Annual Symposium on Computational Methods in Orthopaedic Biomechanics: March 2010, New Orleans, Louisiana, Podium and Poster Presentations.

Salas★, C., Reda Taha, M.M., DeCoster, T. and Mercer, D. “Intramedullary Nail vs. Plate in Fractures of the Distal Femur”, ORS 56th Annual Meeting, March 2010, New Orleans, Louisiana, Podium Presentation.

2009

Afifi, A., Medoro★, A., Salas★, C., Reda Taha, M.M. and Cheema, T. “Anatomy of Irreducible Metacarpophalangeal Dislocation in a Cadaver Model”, American Society for Surgery of the Hand Conference, September 2009, Podium Presentation.

Afifi, A., Medoro★, A., Salas★, C., Reda Taha, M.M. and Cheema, T. “Anatomy of Irreducible Metacarpophalangeal Dislocation in a Cadaver Model”, American Orthopaedic Association Meeting, June 2009, Poster Presentation.

Afifi, A., Medoro★, A., Salas★, C., Reda Taha, M.M. and Cheema, T. “Anatomy of Irreducible Metacarpophalangeal Dislocation in a Cadaver Model”, 28th Annual University of New Mexico Orthopaedic Alumni Conference, June 2009, Podium Presentation.

2008

Salas★, C., Reda Taha, M.M., DeCoster, T. and Mercer, D. “Pattern of Failure of LCP’s Contrasted with Conventional Treatment of Distal Femur Fracture”, 27th Annual University of New Mexico Orthopaedic Alumni Conference, June 2008, Podium Presentation.

Technical Reports

Reda Taha, M.M. Grahn, R., Hays, J., and Reinhardt, A.K. “Examining Short & Long term Properties of Self-Consolidating Concrete (SCC)”, *Report NMC05253, Submitted to New Mexico Department of Transportation (NMDOT) Research Bureau, May 2011.*

Reda Taha, M.M. “Fatigue Testing and Simulation of Transpo Couplers”, *Report Submitted to Transpo Industries, April 2011.*

Rahman, M. K. and Reda Taha, M.M. “Design of Effective Passive Strategy for Controlling Jellyfish Ingress to Water Intake in Al Qurayyah Power Plant Using Fiber Reinforced Polymers”, *Report Submitted to Saudi Electrical Power Company, March 2011.*

Rahman, M. K. and Reda Taha, M.M. “Study on Northern Seawater Intake Structure for Sea Water Treatment Plant at Qurayyah, Saudi Arabia”, *Report Submitted to Saudi Aramco, October 2010.*

Reda Taha, M.M. and Azarbajani, M. “Monitoring Long-Term In-Situ Behavior of Installed Fiber Reinforced Polymer: Report I: State of the Art in Structural Health Monitoring of Bridges and FRP Systems, Report II: Proposed Monitoring System for Bridge 7937 in Tucumcari, Report III: Analysis and Results of Post-Construction Monitoring for Bridge 7937 in Tucumcari”, *Report NM08TT-02, Submitted to NMDOT Research Bureau, June 2009.*

Reda Taha, M.M., Choi, K.K. and Azarbajani, M. “Strengthening Reinforced Concrete Bridges in New Mexico Using Fiber Reinforced Polymers: Report I: Structural Analysis and Evaluation of Bridges 7930, 7931, 7937 and 7938 in Tucumcari, Report II: Design Method for Strengthening K-Frame Bridges Using FRP, Report III: Implementation of FRP Design Alternative to K-Frame Bridge, Report IV: Guidelines for Using FRP Technology for Strengthening Bridges”, *Report NM06TT-01, Submitted to NMDOT Research Bureau, March 2008.*

Reda Taha, M.M. and Schnalzer, R. “Identifying Performance Patterns on New Mexico Bridges”, *Report NM04STR-03, Submitted to NMDOT Research Bureau, March 2006.*

Thesis and Dissertation

A New Non-Metallic Anchorage System For Post-Tensioning Applications Using Fibre Reinforced Polymers (FRP). Ph.D. Dissertation, The University of Calgary, November 1999.

Polymers in Concrete. M.Sc Thesis, Ain Shams University, April 1996.

PUBLIC PRESENTATIONS

Invited Talks

Artificial Intelligence in Structural Engineering, **Invited Lecture**, TECHNICAL UNIVERSITY OF AACHEN, AACHEN, GERMANY, July 2004.

Research and Development Towards Intelligent Structural Health Monitoring, **Invited Lecture**, ROYAL MILITARY COLLEGE OF CANADA, KINGSTON, ONTARIO, CANADA, April 2005.

High Performance Concrete: Fundamentals, **Invited Lecture**, Department of Structural Engineering, AIN SHAMS UNIVERSITY, CAIRO, EGYPT, June 2005.

Modeling Creep of the Medial Collateral Ligaments Using Fuzzy Set Theory, **Invited Lecture**, Department of Orthopaedics, HEALTH SCIENCE CENTER, UNIVERSITY OF NEW MEXICO, August 2006.

Integrative Structural Health Monitoring Research in New Mexico, **Invited Lecture**, ASCE NEW MEXICO CHAPTER, Las Cruces, NM, March 2006.

Towards Intelligent Structural Health Monitoring, **Invited Lecture**, SIGMA-XI NEW MEXICO CHAPTER, October 2007.

Structural Health Monitoring: From Machine Maintenance to Machine Intelligence, **Invited Talk**, UNIVERSITY OF NOTRE DAME, SOUTH BEND, INDIANA, February 2008.

Next Generation Nano-based Materials for Construction and Infrastructure Monitoring: A Peek at 2030! **Invited Talk**, EGYPTIAN PETROLEUM RESEARCH INSTITUTE, Cairo, Egypt, December 2008.

Next Generation Nano-based Materials for Construction and Infrastructure Monitoring: A Peek at 2050! **Invited Talk**, Association of Young Engineers, Albuquerque, New Mexico, August 2009.

Next Generation Materials and Structures! **Invited Talk**, NEW MEXICO ASSOCIATION OF STRUCTURAL ENGINEERS, Albuquerque, New Mexico, September 2009.

Strengthening and Health Monitoring of Bridges in New Mexico! **Invited Talk**, ASCE NEW MEXICO CHAPTER, Albuquerque, New Mexico, October 2009.

Sustainable Structural Health Monitoring for Bridges in New Mexico! **Invited Talk**, 47th PAVING CONFERENCE, Albuquerque, New Mexico, January 2010.

Nano-Materials for a New Generation of Structural Composites! **Invited Talk**, EGYPTIAN PETROLEUM RESEARCH INSTITUTE, Cairo, Egypt, July 2010.

Next Generation Structural Composites Using Nanotechnology! **Invited Talk**, UNITED ARAB EMIRATES UNIVERSITY, Al-Ain, United Arab Emirates, February 2011.

Next Generation Structural Composites Using Nanotechnology! **Invited Talk**, SAMPE Symposium, Albuquerque, New Mexico, November 2011.

Multi-Scale Bio-inspired Optimization for Blast Resistant Cellular Composites! **Invited Talk**, Army Research Office Workshop on Bio-inspired Systems, April 2012.

Next Generation Structural Composites Using Nanotechnology! **Invited Talk**, Sejong University, South Korea, August 2012.

Nanotechnology for New Class of Structural Composites! **Invited Talk**, American University in Sharjah, Sharjah, UAE, March 2013.

Guest Lecturer

Guest Lecturer, ChNE 499/361 *Undergraduate Biomolecular Engineering*, December Invitee: Dr. Heather Caravan, Department of Chemical Engineering, UNM. Fall 2008 and Fall 2009.

Guest Lecturer: *Introduction to Biomechanics for Orthopaedic Residents*. Invitee: Dr. Thomas DeCoster, Department of Orthopaedics, UNM. March 2008.

Technical Presentations since 2004

- A Next Generation Low-Cost MEMS Based Sensors: Challenges for Implementation in SHM Systems*, Second Canadian Workshop on Structural Health Monitoring, Winnipeg, Canada, September 2004.
- A Fuzzy-Aided Wavelet Damage Recognition for Intelligent Structural Health Monitoring*, Second European Workshop on Structural Health Monitoring, Munich, Germany, July 2004.
- Automization of An INS/GPS Integrated System Using Genetic Optimization*, 5th International Symposium on Soft Computing for Industry, WAC 2004, Seville, Spain, June 2004.
- An Innovative Neuro-Fuzzy Model for Predicting Creep of the Medial Collateral Ligament*, 5th International Symposium on Soft Computing for Industry, WAC 2004, Seville, Spain, June 2004.
- Example Applications of Artificial Intelligence in Structural Engineering*, ASCE New Mexico Chapter, Albuquerque, NM, April 2004.
- Biomechanics of Ligaments*, Civil Engineering Seminars, UNM, Albuquerque, NM, Feb. 2004.
- A Generic Fuzzy Metric for Damage Recognition in Structural Health Monitoring Systems*. IEEE Conference on Systems Man and Cybernetics, Big Island, Hawaii, October 2005.
- Nano Photonic Sensors for Damage Diagnosis: An Exploratory Simulation*. IEEE Conference on Systems Man and Cybernetics, Big Island, Hawaii, October 2005.
- Predicting Shear Cracking of Prestressed Concrete Beams Using Fuzzy Learning from Examples*. Third International Conference on Construction Materials: (CONMAT 05), Vancouver, Canada, August 2005.
- Rubber Concrete: A New Addition to Polymer Concrete*. Third International Conference on Construction Materials: (CONMAT 05), Vancouver, Canada, August 2005.
- On Investigating Recurrent Neural Networks for Predicting Masonry Creep*. Third International Conference on Construction Materials: (CONMAT 05), Vancouver, Canada, August 2005.
- Interrelating Creep and Stress Relaxation of Medial Collateral Ligaments Using A Fuzzily Modeled Collagen Fibre Recruitment*. Twelfth International Conference on Computational Methods and Experimental Measurements, CMEM Valetta, Malta, June 2005.
- Enhancing Uncertainty Tolerance in Modelling Creep of Ligaments Using Fuzzy Logic*. Third International Symposium on Advanced Biomaterials /Biomechanics, ISAB2, Montreal, Canada, April 2005.
- New Sensors for Damage Detection Using Nano Photonic Bandgap Materials*. 10th Arab Structural Engineering Conference, November 2006, Kuwait City, Kuwait.
- A Nouvelle Approach for Assessing the Possibility of Damage in Structures*. 10th Arab Structural Engineering Conference, November 2006, Kuwait City, Kuwait.
- Predicting the Punching Shear Strength of Interior Slab-Column Connections Using Fuzzy Systems*. Joint International Conference on Computing and Decision Making in Civil and Building Engineering, Montreal, Canada, June 14, 2006.
- Creep and Shrinkage of Self-Compacting Concrete: Preliminary Results*. 12th International Colloquium on Structural and Geotechnical Engineering, Cairo, Egypt, December 2007.
- An Inductive Reasoning Approach for Fuzzy Damage Detection in Structures*. 12th International Colloquium on Structural and Geotechnical Engineering, Cairo, Egypt, December 2007.
- Robustness to Uncertainty in Modelling Deflection of Reinforced Concrete Structures*. 12th International Colloquium on Structural and Geotechnical Engineering, Cairo, Egypt, December 2007.
- An Inductive Reasoning Approach for Damage Detection in Structural Health Monitoring*. 41st Annual Asilomar Conference on Signals, Systems, and Computers, Nov 2007, Monterey, CA.
- Investigating Long-term Behavior of Epoxy at the Concrete-FRP Interfaces*. International Conference of FRP, July 2007, Patras, Greece.

- FRP for Bridge Strengthening in New Mexico.* 44th Paving Conference, January 2007, Albuquerque, New Mexico.
- Structural Health Monitoring Research for Efficient Structures.* Sandia National Laboratories, Wind Energy Group, January 2007, Albuquerque, New Mexico.
- Realizing the Possibility of Concrete Cracking.* 5th ASCE International Engineering and Construction Conference (IECC'5), August 2008, Irvine, CA.
- Hot-Spot Damage Monitoring in Aerospace Composites Using Acoustic Bandgap (ABG) Sensors.* ASCE Earth & Space 2008, Long Beach, CA, March 2008.
- Nano versus Macro Creep of Concrete.* International Conference on Creep, Shrinkage and Durability of Concrete, CONCREEP 08, October 2008, Ise Shima, Japan.
- Screening the Significance of Factors Affecting Concrete Shrinkage.* International Conference on Creep, Shrinkage and Durability of Concrete, CONCREEP 08, October 2008, Ise Shima, Japan.
- Next Generation Nano-based Materials for Construction and Infrastructure Monitoring: A Peek at 2050!* Department of Civil Engineering Seminar, UNM, Feb. 2009, Albuquerque, New Mexico.
- Fracture Toughness of Hydrated Cement Paste Using Nanoindentation!* 7th FRAMCOS Conference, May 2010, Jeju, South Korea.
- Damage Tracking in Pipelines Using Smart Sensor Network,* First Middle East Conference on Smart Monitoring, Assessment and Rehabilitation of Civil Structures, SMAR2011, February 2011, Dubai, United Arab Emirates.
- Sustainable structural health monitoring using field programmable gate array (FPGA) technology,* Proceedings of the First Middle East Conference on Smart Monitoring, Assessment and Rehabilitation of Civil Structures, SMAR2011, February 2011, Dubai, United Arab Emirates,
- Creep of Fiber Reinforced Polymer-Epoxy-Concrete Interface Incorporating Carbon Nanotubes,* First Middle East Conference on Smart Monitoring, Assessment and Rehabilitation of Civil Structures, SMAR2011, February 2011, Dubai, United Arab Emirates,
- Short and Long Term Properties of Self-Consolidating Concrete Made Using New Mexico Aggregate,* ACI New Mexico Chapter, October 25, 2011, Albuquerque, New Mexico.
- Quantifying Deflection Variation in RC Beams Propagated from Microstructural Variability in Concrete using Homogenization Technique,* Andy Scanlon Symposium, ACI Fall Convention, October 2011, Cincinnati, Ohio.

RESEARCH FUNDING**FOCUS AREAS:**

Structural Health Monitoring, Structural Composites, Nanocomposites for Energy Applications and Biomechanics.

FUNDING Statistics:

Total funding including PI and Co-PI since January 2004: **\$ 6,935,310**

Total Research Expenditures since January 2004: **\$ 3,941,001**

Total number of funded proposals since January 2004: 39

Total number of submitted proposals since January 2004: 78

FUNDING AGENCIES:

National Science Foundation (NSF)

Army Research Office (ARO)

Air Force Research Laboratory (AFRL)

Department of Defense University Research Instrumentation Program (DURIP)

Defense Threat Reduction Agency (DTRA)

Federal Highway Administration (FHWA)

Department of Homeland Security (DHS)

Oak Ridge Associated Universities (ORAU)

New Mexico Department of Transportation (NMDOT)

Sandia National Laboratories, Department of Energy (DOE)

STC.UNM, Private Industry.

CSA Engineering, Private Industry.

Stryker Foundation, Private Industry.

Orthofix Inc., Private Industry.

Funded Research (Total 39 Funded Research Project)

<i>Year</i>	<i>Details - Title</i>	<i>Agency</i>	<i>Award</i>	<i>Period (month)</i>
2012	Co-PI, "Wellbore Seal Repair Using Nanocomposite Materials" (PI: J. Stormont)	Department of Energy (DOE)	\$880,000	36
2011	PI, "A New Generation of Polymer Concrete with Improved Impact and Fatigue Strength Using Carbon Nanotubes"	STC.UNM	\$25,000	12
2011	PI, "Nano-rubber Toughened Epoxy for Energy Absorbing Composites" (Co-PI: U. Kandil)	National Science Foundation (NSF)	\$221,876	24
2011	PI, "Synthesis and Multi-scale characterization of Calcium Silicate Hydrate (CSH)"	National Science Foundation (NSF)	\$196,315	24
2010	PI, "Assessment of Health and Integrity of Aerospace Joints via In-Situ Ultrasonic Signals"	CSA Engineering, A Moog Company	\$30,000	12
2010	PI, "High Velocity Impact Testing Equipment for Blast Tolerant Composites", (Co-PI: M. Al-Haik)	Defense University Research Instrumentation Program (DURIP)	\$129,000	12
2010	PI, "Topological Optimization of Photonic Crystals"	Sandia National Laboratories (SNL)	\$43,000	12
2009	PI, "New High Toughness Composite Materials Using Functional Nano-rubber Particles", (Co-PI:	International US-Egypt Funding Program	\$15,000	6

	U. Kandil, EPRI, Egypt)			
2009	Co-PI, "Sputtering System for CNT Growth for Next Generation Structural Composites", (PI: M. Al-Haik)	Defense University Research Instrumentation Program (DURIP)	\$190,000	12
2009	PI, "Structural Health Monitoring for Aerospace Structures"	Sandia National Laboratories (SNL)	\$30,582	12
2009	PI, "Smart Structural Health Monitoring of Aerospace Structures"	Air Force Research Laboratory (AFRL)	\$50,000	24
2009	Co-PI, "Risk Analysis", (PI: F. Gilfeather)	Defense Threat Reduction Agency (DTRA)	\$130,000	12
2008	PI, "Multi-scale Topological Optimization for Next Generation Impact-Tolerable Composites", (Co-PIs: M. Al-Haik, C. Luhrs, D.A. Tortorelli: UIUC and T. Connolly: UTSA)	Army Research Office (ARO)	\$803,000	36
2008	Co-PI, "Novel Structural Composite Using Surface Grown Carbon Nanotubes", (PI: M. Al-Haik and Co-PI: C. Luhrs)	National Science Foundation (NSF)	\$231,518	24
2008	PI, "Next Generation Composites Using Surface Grown Carbon Nanotubes", (Co-PIs: M. Al-Haik and C. Luhrs, H. Garmestani, GATech.)	Defense Threat Reduction Agency (DTRA)	\$1,123,000	36
2008	PI, "Examining Short and Long Term Properties of Self Consolidating Concrete"	New Mexico Department of Transportation (NMDOT)	\$110,000	27
2008	Co-PI, "Nano-Technology Based Advanced Cementitious Geo-Materials for Blast Resistance Structures", (PI: A.p Maji)	Defense Threat Reduction Agency (DTRA)	\$250,000	24
2008	Co-PI, "Quantification of Inference Uncertainty in Scientific and Social Modeling/Forecasting Applications", (PIs: T. Ross)	Defense Threat Reduction Agency (DTRA)	\$299,000	24
2008	Co-PI, "Pre-Incident Indicators Analysis", (PI: F. Gilfeather)	Department of Homeland Security (DHS)	\$123,406	12
2007	PI, "Optimization of Photonics and Acoustic Bandgap Materials"	Sandia National Laboratories	\$170,813	24
2007	Co-PI, "An Integrated Multidisciplinary Nanotechnology Undergraduate Education Program at UNM", (PI: M. Al-Haik and Co-PI: Z. Leseman)	National Science Foundation, (NSF), Grant ID: 0741525	\$199,900	24
2007	Co-PI, "Investigating Locking Pegs with Intermediary Nails", (PI: T. A. Decoster, MD, and Co-PI: T. Khraishi)	Orthofix, Inc.	\$32,000	12
2007	PI, "Post-Construction Monitoring of FRP Strengthening System at Bridge 7937, Tucumcari, New Mexico"	Federal Highway Administration (FHWA)	\$120,000	18
2007	Co-PI, "Nano-Technology Based Advanced Cementitious Geo-Materials for Blast Resistance Structures", (PI: A. Maji)	Defense Threat Reduction Agency (DTRA)	\$393,829	24
2007	Co-PI, "Multi-variable Intelligent Decision Support	Defense Threat Reduction Agency	\$145,288	12

	Tool” “MIDST”, (PI: F. Gilfeather)	(DTRA)		
2006	PI, “Strengthening Reinforced Concrete Bridges in New Mexico Using Fiber Reinforced Polymers”	NM Department of Transportation (NMDOT)	\$95,783	12
2006	Co-PI, “Investigating Pattern of Failure of Locking Plates Contrasted with Conventional Treatment of Distal Femur Fracture”, (PI: T. A. Decoster, MD)	Stryker Foundation	\$41,000	12
2006	Co-PI, “Decision Support System for Chemical and Biological Attacks”, (PI: F. Gilfeather)	Defense Threat Reduction Agency (DTRA)	\$150,000	12
2005	PI, “Optimization of Nano Photonic Crystal Micro-Structure for Efficient Energy Transmission”	Sandia National Laboratories	\$29,000	12
2005	Co-PI, “Strategic Partnership for Undergraduate Research Activities”, (PI: F. Gilfeather)	Defense Threat Reduction Agency (DTRA)	\$100,000	12
2005	PI, “Intelligent Damage Diagnosis Module”	Sandia National Laboratories (SNL)	\$40,000	12
2005	PI, “Intelligent Modeling Modules for Predicting and Analyzing Time-Dependent Deformations of Critical Infrastructure”	U.S.-Egypt Science and Technology Joint Fund Program	\$15,000	6
2005	PI, “Blast Load Simulation and Courseware”	Defense Threat Reduction Agency (DTRA)	\$344,000	12
2005	PI, “Exploratory Investigations for Developing a Multi-Dimensional Fuzzy Damage Recognition Approach for Structural Health Monitoring”	Sandia National Laboratories (SNL)	\$18,000	6
2005	PI, “Life Cycle Cost Analysis of Bridges for Maintenance Decision Making”	NM Department of Transportation (NMDOT)	\$50,000	12
2004	PI, “Intelligent Damage Diagnostic Module for Structural Health Monitoring”	Sandia National Laboratories (SNL)	\$40,000	12
2004	Co-PI, “Decision Support System for Chemical and Biological Attacks”, (PI: F. Gilfeather)	Defense Threat Reduction Agency	\$125,000	12
2004	PI, “Integrating Structural Modeling and Artificial Intelligence Techniques for Modeling Time Dependent Behavior of Knee Ligaments”	Oak Ridge Associated Universities	\$10,000	12
2004	PI, “Exploratory Investigation of Wavelets for Structural Health Monitoring”	Sandia National Laboratories (SNL)	\$15,000	3

Participated in following funded international projects

<i>Year</i>	<i>Details - Title</i>	<i>Agency</i>	<i>Award</i>	<i>Period (month)</i>
2009	Advisor, “ <i>Functional Nano-rubber Synthesis</i> ” (PI: U.F. Kandil, Egyptian Petroleum Research Institute)	Science and Technology Department Funding (STDF), Egypt	30k Egy. Pound (US\$ 5k)	6
2010	Consultant, “ <i>Nano-materials with Development of Nano-Based Oil Well Cement Slurry for High Temperature and Pressure Oil Well Cementing</i> ” (PI: M. K. Rahman, King Fahd University of Petroleum and Minerals, Saudi Arabia)	KACST, Saudi Arabia	2.0 M Saudi Riyal (US\$ 533k)	36
2011	Co-PI, “ <i>Nano-rubber Toughened Epoxy for Energy Absorbing Composites</i> ” (PI: U.F. Kandil, Egyptian Petroleum Research Institute)	Science and Technology Department Funding (STDF), Egypt	1.3 M Egy. Pound (US\$ 221k)	24
2012	Consultant, Establishment of Polymer Nanocomposite Center (PNC) (PI: U.F. Kandil, Egyptian Petroleum Research Institute)	Ministry of High Education and Scientific Research	2.5 M Egy. Pound (US\$ 400k)	12
2012	Consultant “ <i>Environmental Friendly “Green” Thermoplastic Composites Using Nano-Modified Agricultural Solid Waste</i> ” (PI: U.F. Kandil, Egyptian Petroleum Research Institute)	Science and Technology Department Funding (STDF), Egypt	10 M Egy. Pound (US\$ 1.67M)	36

Participated in establishing the following international agreements

<i>Year</i>	<i>Details - Title</i>	<i>Partner(s)</i>
2010	Memorandum of Understanding	Egyptian Petroleum Research Institute (EPRI), Egypt.
2012	Memorandum of Cooperation	Egyptian Petroleum Research Institute (EPRI), Egypt and Egyptian Petrochemical Holding Company (ECHEM), Egypt
2013	MS and PhD dual degree agreement	Sejong University, Seoul, South Korea (Signed March 2013)

INTERNATIONAL, NATIONAL, UNIVERSITY SERVICES

Scientific Collaborations at Different Capacities with the Following Universities

- University of New Castle, Australia
- Royal Military College of Canada, Canada
- University of Calgary, Canada
- Helwan University, Cairo, Egypt
- University of Aachen, Germany
- Kyoto University, Japan
- King Fahd University of Petroleum & Minerals, Saudi Arabia
- Sejong University, South Korea
- Soongsil University, South Korea
- Delft University, The Netherlands
- American University of Sharjah, Sharjah, United Arab Emirates
- United Arab Emirates University, Al-Ain, United Arab Emirates
- University of Illinois at Urbana- Champaign, USA
- University of California, Irvine, USA
- Georgia Institute of Technology, USA
- New Mexico State University, USA
- New Mexico Institute of Mining & Technology (NM Tech), USA
- University of Texas, San Antonio, USA

International assignments

- Visiting professor of the following institutions during sabbatical leave (2012-2013)
 - *Sejong University, Seoul, South Korea*
 - *American University of Sharjah, Sharjah, United Arab Emirates.*

Associate Editor

- Int. Journal of Experimental and Computational Biomechanics, Inderscience Publishers (2008-2011).

Tenure and Promotion Reviewer

- M. Al-Hassan, Indiana Univ.-Purdue Univ. Fort Wayne Engineering Department, (2011).
- A. Said, University of Nevada Las Vegas, UNLV (2011).

Reviewer for National and International Research Funding Agencies:

- National Science Foundation (NSF), USA (2008, 2009, 2011).
- Army Research Office (ARO), USA, (2008, 2009).
- U.S. Department of Energy, EPOCOR Program (2009, 2010)
- Oak Ridge National Laboratory (2010)
- State of Nevada, EPSCOR Research Chair Review, USA (2010).
- State of Nevada, EPSCOR Program, USA (2009).
- State of Louisiana, EPSCOR Program, USA (2009).
- National Council for Research and Development, Romania (2011).
- National Science and Engineering Research Council of Canada (NSERC), (2004, 2009).
- The Dutch Technology Foundation STW, The Netherlands (2009, 2010)
- The Portuguese Foundation for Science and Technology (FCT), Portugal (2012)

Reviewer for more than 20 Scholarly Journals, Recent Reviews Include:

- Reviewer, *ACI Structural and Materials Journals*
- Reviewer, *Materials & Structures*, Springer, RILEM, France
- Reviewer, *ASCE Journals* (Structural Engineering, Materials, Composites, Engineering Mechanics)
- Reviewer, *Engineering Structures*, El-Sevier Publications

- Reviewer, *Construction & Building Materials*, El-Sevier Publications
- Reviewer, *Composite Structures*, El-Sevier Publications
- Reviewer, *International Journal of Impact Engineering*, El-Sevier Publications
- Reviewer, *Journal of Composites B: Engineering*, El-Sevier Publications
- Reviewer, *Canadian Journal of Civil Engineering (CJCE)*, Canada
- Reviewer, *J. of Smart Structures and Systems*, Techno Press, Korea
- Reviewer, *J. of Smart Materials and Structures*, IOP
- Reviewer, *J. of Structural Health Monitoring*
- Reviewer, *Sensors*, Switzerland

Member of International Technical Committee of the Following Conferences:

- 1- International Scientific Committee Integrated Life Cycle Design of Structures (ILCDES) Symposium, Dec. 2003, Kuopio, Finland, 2003.
- 2- International Technical Committee, Third International Conference on Construction Materials Performance, Vancouver, Canada, August 2005.
- 3- International Technical Committee, 10th Canadian Masonry Conference, Calgary, Canada, June 2005.
- 4- International Technical Committee, World Automated Congress, Budapest, Hungary, June 2005.
- 5- 12th Int. Colloquium on Structural and Geotechnical Engineering, Cairo, Egypt, December 2007.
- 6- International Scientific Committee, 5th ASCE International Engineering and Construction Conference (IECC'5), Irvine, California, August 2008.
- 7- International Technical Committee, 11th Canadian Masonry Conference, Toronto, Canada, June 2009.
- 8- Session Chairman, Nanotechnology for Concrete: The Next Big Thing is Small, American Concrete Institute (ACI) Fall Convention, New Orleans, November 2009.
- 9- Int. Technical Committee, 8th International Masonry Conference, Dresden, Germany, July 2010.
- 10- Session Chairman for FraMCoS-7 International Conference, Jeju, Korea, May 2010.
- 11- Session Chairman, ACI Spring Convention, March 2010, Chicago, Frontiers of Polymers in Concrete.
- 12- Session Chairman for ASME Conference, SMASIS 2010 Session on Space Structures, September 2010.
- 13- International Technical Committee, First Middle East Conference on Smart Monitoring, Assessment and Rehabilitation of Civil Structures, SMAR2011, Dubai, UAE, February 2011.
- 14- International Technical Committee, Second Middle East Conference on Smart Monitoring, Assessment and Rehabilitation of Civil Structures, SMAR2013, Istanbul, Turkey, September 2013.
- 15- International Scientific Committee, Congress on Materials and Structural Stability, Rabat, Morocco, November 2013.

National and International Services

Member of American Concrete Institute (ACI, USA)

- Secretary of ACI committee 548 (Polymers in Concrete) (2009-Present)
- Chairman: Subcommittee 548-C Structural Applications of Polymer Concrete (2010-Present)
- Chairman: ACI Task force on polymer modified concrete (2001-2008)
- Voting Member, ACI Committee 435, (Deflection of RC structures)
- Voting Member, ACI Committee 236 (Materials Science)
- Associate Member of ACI committee 209 (Creep and Shrinkage)
- Associate Member of ACI committee 440 (FRP)

Association for Building Materials and Structures (RILEM, France)

- Member of RILEM committee strengthening of Masonry Structures (2008-present)
- Associate Member of RILEM committee Life time performance of structures (2004-2006)

Member of American Society of Civil Engineers (ASCE, USA)

Member of Society of Scientific Research (Sigma-Xi).

Member of American Institute of Steel Construction (AISC, USA)

Organized the following International Conferences/Special Sessions

Organizer, Two Special Sessions on Field Applications of Structural Health Monitoring, First Middle East Conference on SHM. SMAR 2011, Dubai, February 2011.

Organizer and Moderator, One day workshop on Topological Optimization, Albuquerque, NM, April 2010.

Organizer, Two Special Sessions on Frontiers of Polymers in Concrete, American Concrete Institute (ACI) Spring Convention, Chicago, March 2010.
Organizer, with K. Sobolev (University of Wisconsin Milwaukee) Two Special Sessions on Nanotechnology for Concrete, American Concrete Institute (ACI) Fall Convention, New Orleans, November 2009.
Organizer, with J. Grande-Allen (Rice University), Three Special Sessions on Biomechanics and Biomaterials, Annual Meeting of Society of Experimental Mechanics, Albuquerque, NM, June 2009.
Organizer, Two Special Sessions on Structural Health Monitoring (SHM), 5th ASCE International Engineering & Construction Conference (IECC'5), Irvine, CA, 2008.
Organizer, Two Special Sessions on Structural Health Monitoring (SHM), IEEE Conference on Systems of Systems, Big Island, Hawaii, October 2005.
Co-organizer: ASEE Gulf-Southwest Annual Conference, Albuquerque, NM, USA, 2008.
Convener and Main Organizer: International Conference on Performance of Construction Materials in the New Millennium (ICPCM), Cairo, Egypt, Feb. 2003.

Local Professional Activities

PE Review Course for Structural Engineering I & II; 2004-present. This is a voluntary activity I provide every semester for engineers in New Mexico. Effort endorsed by New Mexico Society of Professional Engineer (NMSPE)

Member of ACI New Mexico Chapter

Judge for New Mexico Society of Professional Engineers, *Best Building Competition*, Summer 2010

University of New Mexico Services

Member, School of Engineering Search Committee for CE Chairman, 2004-2005

Member: Department of Civil Engineering, Equipment Committee, 2007 – 2008

Member: UNM VP-Task force for Proposal Development Software, Summer 2008

Member: Department of Civil Engineering, Graduate Committee, 2005 – 2010

UNM Faculty Senator (Member of the Faculty Senate) 2008 – 2010.

Member, School of Engineering Dean Search Committee, 2010 – 2011

Member, Advisory Committee to Vice President for Research (VPR) on AFRL, 2010 – Present

Member, Advisory Committee to VPR on University Strategic Partnership with DTRA, 2010 – Present

Director of Graduate Program, Department of Civil Engineering, 2010 – Present

Member, UNM Limited Competition Review Committee, 2010 – Present

Short Courses Attended

Introducing Sustainability to the Curriculum, Syracuse University, NY, June 2011

Workshop on Research Fund Management, UNM, April 2004

ASEE Effective Teaching Workshop, Salt Lake City, Utah, June 2004

CONSULTING SERVICES

Professional Registration

Professional Engineer, Alberta, Canada, License # M68041 (active since 2002)
Professional Engineer, Saskatchewan, License # 12198 (inactive)

Consulting with the Following Companies

- Alden Lab, Holden, Massachusetts, USA
- CSA Engineering, MOOG Company, California, USA
- Gunderboom Inc, Scarborough, Maine, USA
- ISL Engineering, Calgary, Canada
- KCPC, Kuwait
- Pacific Netting Products, Anchorage, Alaska, USA
- Saudi Aramco, Saudi Arabia
- Saudi Electrical Power Company, Saudi Arabia.
- SPECO Engineering, Calgary, Canada
- Stearns Engineering, Virginia, USA
- Stutzki Engineering, Milwaukee, Wisconsin, USA
- TMT Energy Inc., California, USA
- Transpo Industries., New York, USA
- Sogreah, UAE and France.
- Zoltek, Texas, USA

Consultant for Special Projects

<i>Year</i>	<i>Project</i>	<i>Location</i>
2012	Forensic Analysis of Glass Skylight, Zuhair Fayeze Partnership (ZFP) HQ	Jeddah, Saudi Arabia
2011	Fatigue Assessment of Transpo Couplers	New York, USA
2010	Development of Nano-Based Oil Well Cement Powder and Slurry for High Temperature and Pressure Applications	Dhahran, Saudi Arabia
2008	Design of cement-based dry powder mix for encapsulation applications using oil well cement, Zeolite and pozzolans.	Texas, USA
2007	Latex Modified Concrete Mix Design for use with FRP, Interchange 77A, Bridge 400 2NB/SB	Kuwait City, Kuwait

Structural Design of Bridges

<i>Year</i>	<i>Project</i>	<i>Location</i>
2013	Design of Hamyriah power station, US\$ 10M construction cost with SOGREAH GULF.	Sharjah, United Arab Emirates
2012	Design of 30 m prestressed ELNG Trestle Road Bridge with SOGREAH GULF.	Fujairah, United Arab Emirates
2012	Construction system design check- Saint Patrick pedestrian overpass. Prestressed concrete arch bridge with ISL/Graham Construction	Calgary, Canada
2010	Pultruded FRP Pedestrian overpass and protection system for power plant, Saudi Electrical Organization, Saudi Arabia	Dhahran, Saudi Arabia
2007	Field Inspection of Latex Modified Concrete Overlays with FRP, Interchange 77A, Bridge 400 2NB/SB	Kuwait City, Kuwait

2003	37th Street Bridge: Structural design of superstructure including four span, prestressed, post-tensioned, NU girders	Calgary, Canada
2003	Macleod–Shawnessy Highway Interchange: Structural design of superstructure including two span, prestressed, post-tensioned, trapezoidal box bridge girders	Calgary, Canada
2002	Macleod–Shawnessy CPR Overpass: Preliminary structural design of superstructure including multi-span prestressed, post-tensioned, HCC bridge girders	Calgary, Canada
2002	Taylor Drive Bridge: Design of single-span prestressed, precast HCC bridge girders	Red Deer, Canada
2002	North Saskatchewan River Highway Bridge: Preliminary design of multi-span prestressed, post-tensioned, NU bridge girders	Red Deer, Canada
2001	Anthony Henday–Whitemud Highway Interchange: Structural design of two span, prestressed, post-tensioned, NU bridge girders	Edmonton, Canada
2001	Anthony Henday–87 Avenue Highway Interchange: Structural design of two span, prestressed, post-tensioned, NU bridge girders	Edmonton, Canada
2001	Little Smokey River Highway Bridge: Structural design of multi span, prestressed, post-tensioned, NU bridge girders	Alberta, Canada
2001	Waskahigan River Highway Bridge: Structural design of multi span prestressed, post-tensioned, NU bridge girders	Alberta, Canada
2001	Milk River Highway Bridge: Structural design of substructure including bridge piers and design check of steel plate girder bridge	Alberta, Canada
2001	Canyon Meadows LRT Station and Pedestrian Overpass: Structural design of LRT platform, LRT station building and the pedestrian overpass	Calgary, Canada
2000	Old Man River Highway Bridge: Structural design of multi-span, prestressed, post-tensioned, 300 m long bridge using NU girders.	Taber, Canada

Structural Design of Buildings

<i>Year</i>	<i>Project</i>	<i>Location</i>
2013	Hamryiah Power Station and Outfall	Sharjah, United Arab Emirates
2003	Alberta Children’s Hospital	Calgary, Canada
2000	People’s Assembly of God using Aluminum structures	South Carolina, USA
2000	Harvest Christian Church, 1000 Seat Multifunctional Church Sanctuary	St. Charles, Missouri, USA
2000	Millennium Construction Warehouse	Fort McMurray, Canada
2000	Aluminum Airport Hangers, Utah Airport	Toole, Utah, USA
2000	Bectel Warehouse, Aluminum structure	Wadsworth, Texas, USA
1999	Lethbridge Exhibition Hall using structural steel	Lethbridge, Canada
1999	Rocky Flats Environmental Tech. Site, 35,000 sq. ft. structure complex, Aluminum Structure	Colorado, USA
1999	Intrawest’s Mountain Creek Resort, 33,000 sq. ft. multi-structure complex, Aluminum structure	New Jersey, USA

Structural Strengthening, Rehabilitation and Monitoring

<i>Year</i>	<i>Project</i>	<i>Location</i>
2012	Design check for FRP strengthening of prestressed box bridge girder and piers, King Fahd Interchange.	Dammam, Saudi Arabia
2011	Structural evaluation and design of strengthening system using CFRP, 60th Street- Gaetz Interchange, ISL Engineering	Red Deer, Canada
2010	Non-Destructive Evaluation, Structural assessment and Structural Strengthening of Water Intake Structure, Qurayyah Water Treatment Plant, Saudi Aramco	Dhahran, Saudi Arabia
2009	Non-Destructive Testing and Structural Monitoring of Reinforced Concrete Bridge, New Mexico Department of Transportation	Tucumcari , New Mexico, USA
2002	Structural Assessment, Load Rating, Trans-Canada Hwy bridge over the CPR, Regina	Saskatchewan, Canada
2002	Structural Strengthening of Calgary Saddledome using CFRP materials	Calgary, Canada
2000	Non-Destructive Evaluation, Redevelopment of the J.J. Bowlen Provincial Building	Calgary, Canada
2000	Strengthening of Scotia Centre using CFRP material	Calgary, Canada
2000	Redevelopment of Palliser Square	Calgary, Canada
2000	Non-Destructive Evaluation, strengthening of Concrete Slabs using CFRP (seven projects)	Calgary, Canada
1999	Combining the use of Wood, Masonry and Concrete Materials for the renovation of Drumheller Memorial Arena	Drumheller, Alberta, Canada
1999	Strengthening of Retaining Walls – Murphy-Sikini oil field	British Colombia, Canada
1999	Rehabilitation of Mount View County bridges	Southern Alberta, Canada

Special Structural Engineering Classes to Industry

<i>Year</i>	<i>Project</i>	<i>Location</i>
2012	Design of RC structures reinforced and strengthened with FRP	Seoul, South Korea
2011	Design of RC structures reinforced and strengthened with FRP	Edmonton, Canada
2009	Structural Reliability Design	Abu Dhabi, United Arab Emirates