

CURRICULUM VITAE

of

MOHAMED SAMIR HEFZY, Ph.D., P.E.
ASME FELLOW

**Professor and Associate Dean of Graduate Studies and Research
Administration, College of Engineering**

The University of Toledo, Toledo, Ohio 43606

Tel. Office: (419)-530-8234/6086

Tel. Cell: (419)-290-3455

Fax: (419)-530-7392

mhefzy@eng.utoledo.edu

<http://www.eng.utoledo.edu/mime/~mhefzy/>

http://www.eng.utoledo.edu/coe/grad_studies/

June 2015

Table of Contents

	Page
<u>BIOGRAPHY</u>	1
<u>PERSONAL INFORMATION AND PROFESSIONAL EXPERIENCE</u>	2
<u>TEACHING</u>	3
Honors & Awards in Instruction	3
Undergraduate and Graduate Courses Taught	3
Short and Continuing Education Courses	3
Curriculum Development	3
Supervision of Projects, Theses & Dissertations	3
<u>RESEARCH</u>	4
Honors & Awards in Research	4
Research Grants Awarded	4
Publications	4
Book Chapters during the past 8 years	4
Refereed Journals and Conference Papers during the past 8 years	5
Presentations at Regional, National and International Meetings during the past 8 years	7
<u>OTHER RESEARCH AND INSTRUCTIONAL CONTRIBUTIONS</u>	8
<u>MEMBERSHIP IN PROFESSIONAL SOCIETIES</u>	8
<u>UNIVERSITY SERVICE ACTIVITIES</u>	9
Service on University Committees (Univ. of Toledo)	9
Service on College Committees (Univ. of Toledo)	9
Service on Departmental Committees (Univ. of Toledo)	9
<u>NATIONAL & INTERNATIONAL PROFESSIONAL ACTIVITIES</u>	10
National Meetings Organizations	10
Professional Review Activities	10
Service and Committee Memberships	11
<u>AWARDS AND RECOGNITION</u>	12
<u>RECENT WORKSHOP AND CONTINUING EDUCATION</u>	12

BIOGRAPHY

Mohamed Samir Hefzy, Ph.D., P.E.

Associate Dean of Graduate Studies and Research Administration, College of Engineering & Tenured Professor of Mechanical, Industrial and Manufacturing Engineering (MIME) & Director, Biomechanics and Assistive Technology Laboratory, MIME, The University of Toledo
1014 Nitschke Hall, 2801 West Bancroft Street, Toledo, Ohio 43606 –3390
Tel: (419) 530-8234/6086; **Fax:** (419) 530-8206/7392
E-mail: mhefzy@eng.utoledo.edu
Web: <http://www.eng.utoledo.edu/mime/~mhefzy/>

Biography

Mohamed Samir Hefzy is currently serving as Associate Dean of Graduate Studies and Research Administration of the College of Engineering at The University of Toledo (UT), Toledo, Ohio. He is a tenured Professor of Mechanical, Industrial and Manufacturing Engineering (MIME) and served as Graduate Program Director of the MIME department since November 2000, and also was the first to hold that position during the 1994-95 academic year. Additionally, he serves as Director of the MIME Biomechanics and Assistive Technology Laboratory at UT. He has been on the faculty of The University of Toledo since 1987. He graduated from Cairo University, Egypt, with a B.E. (Honors) in Civil Engineering in 1972, and a B.Sc. in Mathematics from Ain-Shams University in 1974. He earned his M.S. in Aerospace Engineering in 1977 and his Ph.D. in Applied Mechanics in 1981, both from The University of Cincinnati. He then received training as a Postdoctoral Research Associate for two years in the Department of Orthopedic Surgery at The University of Cincinnati's College of Medicine. In 1983, Dr. Hefzy joined the faculty of Grand Valley State University in Allendale, Michigan as their first engineering faculty. He then returned to the University of Cincinnati as a Research Assistant Professor in 1985.

In December 2003, Dr. Hefzy was elevated to the Grade of American Society of Mechanical Engineers (ASME) Fellow in recognition of his outstanding contributions to research and development, to education and leadership in the Engineering Profession. Dr. Hefzy has published with his students more than 33 peer reviewed journal papers and 100 peer reviewed national and international conference papers, and co-authored more than 19 book chapters in his research areas: Orthopedic Biomechanics and Assistive Technology. Dr. Hefzy has secured more than \$1.5 million in funding as a PI to support his research program, with sponsors including the NIH and the NSF. He has supervised two postdoctoral fellows and has served as primary graduate advisor to 26 masters and doctoral students. In addition, he has supervised more than 130 undergraduate senior design projects at UT.

Dr. Hefzy is the recipient of many awards, including the 2011 Distinguished Service Award from the ASME, the Edith Rathbun Award for Excellence in Outreach and Engagement from The University of Toledo in 2006, the University of Toledo Outstanding Faculty Research Award in 2004 and the College of Engineering's Outstanding Teacher Award and the Outstanding Undergraduate Research Mentoring Award in 1999 and 2001, respectively. His engineering experience and familiarity with recent educational practices led to his selection by the ASME as a Mechanical Engineering Evaluator for the Accreditation Board for Engineering and Technology (ABET). At UT, he continues to serve on many committees, including the Graduate Council and the Research Council. He has served on many other committees including the University Committee for Academic Personnel whose duties include reviewing all UT tenure and promotion applications. He has also served on the faculty senate (as well as the senate's executive committee), the MIME Department Personnel Committee, and the College of Engineering Constitution and By-Laws Committee. On a national level, Dr. Hefzy has served two consecutive three-year terms as the Treasurer and member the ASME's Executive Committee of the Bioengineering Division (BED) (2010-2013 and 2007-2010). He has also served as a member at large on the ASME's Executive Committee of the BED from 1999 to 2002 and as Chair of the BioSolids Technical Committee of the BED from 2004-2007. He has also served a two-year term on the basic Engineering Group Operating Board (BEGOB) as a representative to the Committee on Administration and Finance of the ASME (2011-2013) and a two-year term (2013-2015) on BEGOB as a representative to the strategic planning committee.

PERSONAL INFORMATION & PROFESSIONAL EXPERIENCE

Citizenship: US Citizen

Degrees, with field, institution and date:

B.Sc. (with Honors)	Civil Eng.	Cairo University, Cairo, Egypt, July 1972
B.Sc.	Mathematics	AinShams University, Cairo, Egypt, 1974
M.S.	Aerospace Eng.	Univ. of Cincinnati, August 1977
Ph.D.	Applied Mechanics	Univ. of Cincinnati, August 1981
Postdoctoral training	Orthopaedic Biomechanics	Univ. of Cincinnati, 1981-1983

Professional Registration:

Registered Professional Engineer (PE), State of Ohio, USA; License No. E-53287.

Number of years service on University of Toledo Faculty (28 years):

Professor and Associate Dean of Graduate Studies and Research Administration, College of Engineering	March 2007 - present
Professor and Interim Associate Dean of Graduate Studies, College of Engineering	February 2004 – February 2007
Professor and Graduate Program Director of Mechanical Industrial and Manufacturing Engineering	Nov. 2000 – May 2007
Professor of Mechanical Eng. and Director, Biomechanics Lab.	Sept. 1993 – present
Associate Professor of Mechanical Engineering	Sept. 1987 – August 1993

Other related experience – teaching, research

2/95 – 6/2007	Adjunct Prof., Dept. of Orthopedic Surgery, Medical College of Ohio, Toledo
11/95 – 08/97	Senior Scientist, Biomechanics Laboratory (Sabbatical Leave) King Faisal Specialist Hospital & Research Center, Riyadh, Saudi Arabia
09/96 – 08/97	Visiting Professor (Sabbatical Leave) Dept. of Mechanical Eng., King Saud University, Riyadh, Saudi Arabia
10/87 – 01/95	Adjunct Associate Prof., Dept. of Orthopaedic Surgery, Medical College of Ohio
01/85 – 09/87	Research Assistant Professor, University of Cincinnati, Cincinnati, Ohio
01/86 – 09/87	Lecturer, Evening College, University of Cincinnati, Cincinnati, Ohio
09/83 – 12/84	Assistant Professor, Grand Valley State University, Allendale, Michigan
09/81 – 09/83	Lecturer, Evening College, University of Cincinnati, Cincinnati, Ohio
09/81 – 09/83	Postdoctoral Research Associate, Dept. of Orthopaedic Surgery, Univ. of Cincinnati
09/76 – 08/81	Teaching and Research Assistant, Dept. of Aerospace Eng. & Applied Mechanics, University of Cincinnati, Cincinnati, Ohio
09/72 – 08/76	Instructor, Dept. of Mathematical & Physical Sciences., Cairo Univ., Cairo, Egypt

TEACHING

HONORS & AWARDS IN INSTRUCTION

- Selected to serve as an *ASME/ABET Mechanical Engineering Evaluator*, 2000 - present
- Received the *University of Toledo College of Engineering Outstanding Undergraduate Research Mentoring Award*, May 2001.
- Received the *University of Toledo College of Engineering Outstanding Teacher Award*, May 1999.

UNDERGRADUATE AND GRADUATE COURSES TAUGHT

Over the years, Dr. Hefzy has taught more than 23 undergraduate courses, 10 graduate courses and 6 dual level courses at the University of Toledo, Grand Valley State College, the University of Cincinnati, and King Saud University in Riyadh, Saudi Arabia.

SHORT & CONTINUING EDUCATION COURSES

- A) at the Arab Board Orthopaedic Residency Training Program - Security Forces Hospital, Ministry of Interior, Riyadh, Saudi Arabia *Series of Lectures on Biomechanics*, November 1996.
- B) at the Continuing Medical Education Program of the Sports Medicine Hospital - General Presidency of Youth Welfare, Riyadh, Saudi Arabia *Series of Lectures on Biomechanics*, April 1996.
- C) at the Continuing Education of the University of Toledo
Review of Machine Design for the Professional Engineering Exam, Oct. 1994 and Sept. 1992
- D) at the Dept. of Orthopaedic Surgery, Medical College of Ohio, Toledo, OH, USA.
Annual series of Lectures on *Orthopaedic Biomechanics* 1988 - 1992
- E) at Dana University, Toledo, Ohio, USA
Finite Element Methods, September 28 - October 9, 1992.

CURRICULUM DEVELOPMENT

- Introduced and taught several new graduate and dual level courses in "Advanced Finite Element Methods", "Dynamics of Human Movement" and "Occupational Biomechanics".
- Developed 10 experiments for the experimental stress analysis lab at Grand Valley State University.

SUPERVISION OF PROJECTS, THESES & DISSERTATIONS

Postdoctoral Associates Supervised (2)

Dr. Hefzy supervised Dr. Yi-Chun Li (January 99 – January 2000) and Dr. Dumitru Caruntu (May 2000 – May 2003)

Graduate Students Supervised as Major Project/Thesis/Dissertation Advisor

Dr. Hefzy served as the major advisor for 28 graduate students who have completed their doctoral dissertations, masters' theses and masters' projects under his supervision.

Undergraduate Senior Design Projects Supervised

Dr. Hefzy supervised more than 130 undergraduate senior design projects that were directed to aid individuals with disabilities. The aim of these projects was to improve the quality of life of these individuals by developing custom made devices to increase their functional independence. These projects were supported by the National Science Foundation for the past 16 years.

RESEARCH

HONORS & AWARDS IN RESEARCH

- Received *the University of Toledo Outstanding Faculty Research Award, April 2004.*

RESEARCH GRANTS AWARDED

Dr. Hefzy secured more than \$1.50 million in funding to support his research programs, with sponsors including the National Institute of Health, the National Science Foundation and the Whitaker Foundation. Currently his work is supported by the following grant from the National Science Foundation:

1. “Engineering Senior Design Projects for the Disabled” with Dr. Pourazady, \$125,000.00, 09/01/2009 – 08/31/2016

PUBLICATIONS

Dr. Hefzy has authored and co-authored more than 33 full-length journal articles, 100 conference and proceeding papers in the area of Orthopaedic Knee Biomechanics and Assistive Technology. All of Dr. Hefzy's journal articles and conference/proceedings papers are refereed publications. In addition, Dr. Hefzy has written 19 book chapters (3 on knee biomechanics and 16 on assistive devices). The following is a listing of Dr. Hefzy's publications in the past eight years:

Book Chapters during the past 8 years:

1. “The University of Toledo Projects”, IN: NSF 2012 Engineering Senior Design Projects to Aid the Disabled, by Hefzy and Pourazady, Chapter 21, Edited by John Enderle, Copyright © 2015 by Creative Learning Press, Inc., by Hefzy and Pourazady, pp. 329-348.
2. “The University of Toledo Projects”, IN: NSF 2011 Engineering Senior Design Projects to Aid the Disabled, Chapter 20, Edited by John Enderle, Copyright © 2013 by Creative Learning Press, Inc., by Hefzy & Pourazady, pp. 301-318.
3. “The University of Toledo Projects”, IN: NSF 2010 Engineering Senior Design Projects to Aid the Disabled, Chapter 19, Edited by John Enderle, Copyright © 2012 by Creative Learning Press, Inc., by Hefzy and Pourazady, pp. 351-370.
4. “The University of Toledo Projects”, IN: NSF 2009 Engineering Senior Design Projects to Aid the Disabled, Chapter 21, Edited by John Enderle, Copyright © 2011 by Creative Learning Press, Inc., by Hefzy and Pourazady, pp. 341-360.
5. “The University of Toledo Projects”, IN: NSF 2008 Engineering Senior Design Projects to Aid the Disabled, Chapter 14, Edited by John Enderle, Copyright © 2011 by Creative Learning Press, Inc., by Hefzy and Pourazady, pp. 259-282.
6. “The University of Toledo Projects”, IN: NSF 2007 Engineering Senior Design Projects to Aid the Disabled, Chapter 18, Edited by John Enderle and Brooke Hallowell, Copyright © 2010 by Creative Learning Press, Inc., by Hefzy and Pourazady, pp. 297-316.
7. “The University of Toledo Projects”, IN: NSF 2006 Engineering Senior Design Projects to Aid the Disabled, Chapter 17, Edited by John Enderle and Brooke Hallowell, Copyright © 2007 by Creative Learning Press, Inc., by Hefzy and Nemunaitis, pp. 315-330.

RESEARCH

Refereed Journal and Conference Papers during the past eight years:

1. F. Tian, M.S. Hefzy and M. Elahinia, “State of the Art Review of Knee-Ankle-Foot Orthoses”, *Annals of Biomedical Engineering*, Vol. 43, No. 2, February 2015, pp. 427-441.
2. G. Nemunaitis, M. J. Roach, M. Boulet, J. Ann Nagu, B. Kaufman, M. Mejna and M.S. Hefzy, (2015), “The Effect of a Liner on the Dispersion of Sacral Interface Pressures During Spinal Immobilization”, *Assistive Technology; The Official Journal of RESNA*, 27:1, 9-17, DOI:10.1080/10400435.2014.940473
3. F. Tian, M. Elahinia, and M.S. Hefzy, “Storing and Releasing Energy with Superelastic NiTi in a Knee-Ankle-Foot Orthosis”, *Proceedings of the 2015 Midwest American Society of Biomechanics Regional Meeting*, February 17-18, 2015, Akron, Ohio, pp. 23.
4. F. Tian, M.S. Hefzy, and M. Elahinia, “Development of a Dynamic Knee Actuator for a Knee-Ankle-Foot-Orthosis Using Superelastic Alloys”, IMECE2014-40431, *Proceedings of the ASME 2014 International Mechanical Engineering Congress and Exposition (IMECE)*, November 14-20, 2014, Montreal, Canada.
5. F. Tian, M. Elahinia and M.S. Hefzy, “Design and Evaluation of a Knee Actuator for a Dynamic KAFO”, paper SMASIS2014-7605, *Proc. of 2014 ASME Smart Materials, Adaptive Structures and Intelligent Systems Conference, SMASIS 2014*, Sept. 8-10, 2014, Newport, Rhode Island, USA.
6. C. Maag, M.S. Hefzy, and V. Kaul, “A User Subroutine to be used with Abaqus to Solve Biphasic Contact Problems”, *Proceedings of the 7th World Congress of Biomechanics*, July 6-11, 2014, Boston, Massachusetts.
7. F. Metelues, M.S. Hefzy, and C. Armstrong, “Biomechanics of Prolong Squatting with Body Shifting”, *Proceedings of the 7th World Congress of Biomechanics*, July 6-11, 2014, Boston, Massachusetts.
8. F. Tian, M. Elahinia, and M.S. Hefzy, “Development of a Knee Actuator for a Dynamic Knee-Ankle-Foot-Orthosis”, *Proceedings of the 2014 Midwest Am. Society of Biomechanics Regional Meeting*, March 4-5, 2014, Akron, Ohio.
9. F. Metelues, M.S. Hefzy, and C. Armstrong, “Effects of Heels Up and Down and Body Shifting on Squatting”, *Proceedings of the 2014 Midwest Am. Society of Biomechanics Regional Meeting*, March 4-5, 2014, Akron, Ohio.
10. F. Tian, M. Elahinia and M.S. Hefzy, “A Dynamic Knee-Ankle-Foot-Orthosis with Smart Material Actuators”, paper SMASIS2013-3044, *Proceedings of the ASME 2013 Conference on Smart Materials, Adaptive Structures and Intelligent Systems, SMASIS 2013*, September 16-18, 2013, Snowbird, Utah.
11. X. Li, A. Kirgesner, A. Stephens, M. Cramer, M.S. Hefzy and M. Pourazady, “Device to Assist Individuals in Dressing Themselves”, Paper SBC2013-14373, *Proceedings of the ASME 2013 Summer Bioengineering Conference, SBC 2013*, June 26-29, Sunriver, Oregon (also won 1st place in the 2013 Undergraduate Design Project Competition in Rehabilitation and Assistive Devices sponsored by the NSF and organized by the Bioengineering Division of the ASME).
12. S. Anderson, B. Goede, D. Kramer, M. Leupp, G. Nemunaitis, M.S. Hefzy and M. Pourazady, “Correlating Air Cushion Pressure to Maximum Interface Pressure on the Buttocks”, Paper ID 94, *Proceedings of the 2013 annual RESNA Conference*, June 20-24, 2013, Seattle, Washington.
13. M. Franchetti, M.S. Hefzy, M. Pourazady and C. Smallman, “Framework for Implementing Engineering Senior Design Capstone Courses and Design Clinics”, *Journal of STEM Education*, Volume 13, issue 3, May – June 2012, pp. 25 – 40.

14. M. Rivet, N. Peatee, M. Payne, M.S. Hefzy and M. Pourazady, “Development of a Device to Assist in packing and Unpacking Bags: Hanging Bag Assistant”, Proceedings of the 2012 RESNA (Rehabilitation Engineering Society of North America) Annual Conference, CD Publication, June 28 – July 3, 2012, Baltimore, Maryland.
15. M. Peterson, N. Gates, J. Sander, M.S. Hefzy and M. Pourazady, “Adaptation of a Power Scooter for Use on a Golf Course”, Proceedings of the 2012 RESNA (Rehabilitation Engineering Society of North America) Annual Conference, CD Publication, June 28 – July 3, 2012, Baltimore, Maryland.
16. T. Brakefield, T. Burkhardt, A. Meehan, G. Nemunaitis, M.S. Hefzy, and M. Pourazady, “Gurney Mattress Redesign”, paper SBC2012-80036, Proceedings of the ASME 2012 Summer Bioengineering Conference, June 20-23, 2012, Farjardo, Puerto Rico.
17. R.M. Patterson, M.S. Hefzy and J. Weisman, “2011 Results from the Summit on Rehabilitation Engineering”, paper SBC2012-80006, Proceedings of the ASME 2012 Summer Bioengineering Conference, June 20-23, 2012, Farjardo, Puerto Rico.
18. J. Thomas, A. Doughty, D. Perkins, E. Wells, M. Pourazady and M.S. Hefzy, “Device to Lift a Person from the Ground to Wheelchair Height”, paper SBC 2011-53175, Proceedings of the ASME 2011 Summer Bioengineering Conference, June 22-25, 2011 in Nemaquin Woodlands Resort, Farmington, Pennsylvania,
19. Bhadane, M., Elahinia, M., Armstrong, C. and M.S. Hefzy, “A Variable Stiffness Ankle Foot Orthosis Based on SMA Wires”, Proceedings of the 2010 Biomedical Engineering Society Annual Meeting, October 6-9, 2010, Austin, Texas.
20. M. Nungester, D. Hetrick, K. Brasher (three undergraduate students), M. Pourazady and M.S. Hefzy, “Development of a Collapsible Wheelchair with Detachable Components”, Proceedings of the 2010 RESNA (Rehabilitation Engineering Society of North America) Annual Conference, CD Publication, June 26-30, 2010, Las Vegas, Nevada. *Also, one of the five winning papers of the 2010 RESNA Student Scientific Paper Competition.*
21. A. Smith, P. Nowicki, M.S. Hefzy, M. Dennis and A. Mustapha, “The Effects of Radial Core Decompression on Lunate Kinematics”, paper SBC2010-19127, Proceedings of the ASME 2010 Summer Bioengineering Conference (SBC), June 16-19, 2010 in Naples, Florida.
22. E. Hauser, M.S. Hefzy and B. Ballinger, “Determination of the Contact Areas in the Patello-Femoral and Tibio-Femoral Joints during Deep Knee Flexion”, Paper SBC2009-206703, Proc. of the 2009 Summer Bioengineering Conference, June 17-21, 2009, Lake Tahoe, California.
23. M. Henschen, A. Kusters, J. Harvey (three undergraduate students), G. Nemunaitis, M. Pourazady and M.S. Hefzy, “Emergency Medical Services Backboard with a Pressure Dispersion Liner”, paper SBC2009-206399, Proc. of the 2009 Summer Bioengineering Conference, June 17-21, 2009, Lake Tahoe, California.
24. E. Tarkesh, M. Elahinia, M.S. Hefzy, and C. Armstrong, “Shape Memory Alloys, as Alternative Actuation Method for Orthosis Devices”, Proceedings of the 2008 North American Congress on Biomechanics, August 5 – 9, 2008, Ann Arbor, Michigan.
25. A. Dauster, M.S. Hefzy, E. Hauser and P. Nowicki, “Development of a Dynamic Knee Simulator”, Paper SBC2008-193033, Proc. of the ASME 2008 Summer Bioengineering Conference, June 25-29, 2008, Marco Island, Florida (CD Publications).
26. M.S. Hefzy, M. Pourazady, and A.A. Afjeh, “Engineering Senior Design Projects to Aid Individuals with Disabilities”, Proceedings of the 2008 American Society for Engineering Education Annual Conference & Exposition, CD Publication, 2008, paper AC 2008-961, pp. 1-17.
27. A. Abbasi and M.S. Hefzy, “Does Lift-Off Occur During Deep Squat”, Paper SBC2007-176077, CD Publications, ASME 2007 Summer Bioengineering Conference, Keystone, Colorado, June 20-June 24, 2007.
28. E. Tarkesh, M. Elahinia, and M.S. Hefzy, “Developing an Active Ankle Foot Orthosis Based on Shape Memory Alloy Actuators”, Paper SBC2007-176911, CD Publications, ASME 2007 Summer Bioengineering Conference, Keystone, Colorado, June 20-June 24, 2007.

29. D. Forney, A. Eid, T. Simiao, A. Oxenrider, J. Caruso, M. Pourazady and M.S. Hefzy, “Development of a Device for Attaching a Wheelchair to a Shopping Cart or baby Stroller”, Proceedings of the 2007 RESNA (Rehab. Eng. Society of North Am.) Conference, Phoenix Arizona, June 15-19, 2007, CD Publication, 2007.
30. J. Balint, J. Michalak, C. Ricco, J. Caruso, M. Pourazady and M.S. Hefzy, “ Wheelchair Lifting System for a PT Cruiser, Proceedings of the 2007 RESNA (Rehabilitation Engineering Society of North America) Conference, Phoenix Arizona, June 15-19, 2007, CD Publication, 2007.

PRESENTATIONS AT REGIONAL, NATIONAL AND INTERNATIONAL MEETINGS

Dr. Hefzy has made more than 75 presentations at regional, national and international meetings. The following presentations were made by Dr. Hefzy during the past eight years:

1. “A Biologically Inspired Knee Actuator for a Knee-Ankle-Foot-Orthosis”, Keynote Lecture 1, to be given on Monday, July 28, 2015 at the International Conference and Expo on Biomechanics and Implant Design, July 27-29, 2015, Orlando, Florida.
2. “Biomechanics of the Knee Joint in Deep Flexion”, Keynote Lecture 1, to be given on Monday, July 28, 2015 at the International Conference and Expo on Biomechanics and Implant Design, July 27-29, 2015, Orlando, Florida.
3. “Development of a Dynamic Knee Actuator for a Knee-Ankle-Foot-Orthosis Using Superelastic Alloys”, Podium presentation at the ASME 2014 International Mechanical Engineering Congress and Exposition (IMECE), November 14-20, 2014, Montreal, Canada.
4. “Gurney Mattress Redesign”, Podium presentation, ASME 2012 Summer Bioengineering Conference, June 20-23, 2012, Farjardo, Puerto Rico.
5. “Device to Lift a Person from the Ground to Wheelchair Height”, Poster presentation, ASME 2011 Summer Bioengineering Conference, June 22-25, 2011 in Nemaquin Woodlands Resort, Farmington, Pennsylvania.
6. “The Effects of Radial Core Decompression on Lunate Kinematics”, Poster presentation, ASME 2010 Summer Bioengineering Conference (SBC), June 16-19, 2010 in Naples, Florida.
7. “Determination of the Contact Areas in the Patello-Femoral and Tibio-Femoral Joints During Knee Flexion”, Poster Presentation, ASME 2009 Summer Bioengineering Conference, Lake Tahoe, CA, June 17-21, 2009.
8. “Development of a Dynamic Knee Simulator”, Poster Presentation, ASME 2008 Summer Bioengineering Conference, Marco Island, Florida, June 25-29, 2008.
9. “Does Lift-Off Occur During Deep Squat”, poster presentation, ASME 2007 Summer Bioengineering Conference, Keystone, Colorado, June 20-24, 2007.
10. “Development of a Successful Engineering Capstone Senior Design Course Using Service Learning”, 2007 EPICS (Engineering Projects in Community Service) Conference, UCSD, San Diego, California, May 22-24, 2007.

OTHER RESEARCH & INSTRUCTIONAL CONTRIBUTIONS

LABORATORY DEVELOPMENT

- During his residency at the University of Toledo (UT), Dr. Hefzy upgraded the Biomechanics Laboratories of the Department of Mechanical Engineering by introducing research activities in human joint mechanics. For the first time, a protocol has been developed between the Biomechanics Laboratories at the UT and the Department of Orthopaedic Surgery and the Anatomy at the Medical College of Ohio (MCO) to allow the transfer of cadaveric specimens between MCO and UT.
- Also, during his residency at the University of Toledo, Dr. Hefzy worked in the development of gait and motion analysis capabilities within the Mechanical Engineering Biomechanics Laboratories to study the dynamics of human motions. Major acquired equipment through NSF funding includes a 4 video cameras image analysis system from Motion Analysis Inc. and two AMTI force platforms.
- During his residency at the King Faisal Specialist Hospital & Research Center (KFSH&RC), Dr. Hefzy worked with the Department of Physical Therapy in order to improve patient care by assessing different rehabilitation regimens and treatment modalities employed by the physical therapists at the hospital.

MEMBERSHIP IN PROFESSIONAL SOCIETIES

Ar-Riyadh Biomedical Engineering Club (Saudi Arabia)	1995 - 1997
Orthopaedic Research Society	1988 - present.
American Society of Biomechanics	1987 - present.
American Society of Engineering Education	1983 - present.
American Society of Mechanical Engineers	1982 - present.
American Academy of Mechanics	1982 - 1994.
Society of Engineering Sciences	1982 - 1994.
National Society of Professional Engineers	1988 - 1991.
Toledo Society of Professional Engineers	1988 - 1991.
Sigma Xi, The Scientific Research Society	1988 - 1991.

UNIVERSITY SERVICE ACTIVITIES

SERVICE ON UNIVERSITY COMMITTEES (Univ. of Toledo)

2009 – 2011	Research Council (Elected)
2009 - 2010	Executive Committee of the Graduate Council (Elected)
2007 – 2008	Faculty Senate
2004 – present	Graduate Council
2006 – 2007	Executive Committee of the Graduate Council (Elected)
2003 – 2008	Diversity Commission
2002 – 2003	Strategic Planning Committee: Phase 2
2002 – 2003	Executive Committee of the Faculty Senate (Elected)
2002 – 2003	Center for Teaching and Learning Advisory Committee
2000 - 2003	Faculty Senate (Elected)
2000 – 2001	Undergraduate Curriculum Committee
2002 – 2005	University Committee on Academic Personnel (Elected)
2001 – 2004	University Committee on Sabbaticals (Elected)
2000 – 2003	Research Council of The University of Toledo
2000 – 2001	University Committee on Sabbaticals
1998 - 1999	Research Council of The University of Toledo.
1998 - 1999	Chair, Real Estate & Financial Markets Program Review Committee.
1992 - 1995	College of Engineering Representative, University Library Committee.
1988 - 1992	Human Subjects Research Committee.
1988 - 1992	Study Committee on Joint Biomedical Engineering Program between the Univ. of Toledo and the Medical College of Ohio.

SERVICE ON COLLEGE COMMITTEES (Univ. of Toledo)

2003	Dean of Engineering Search Committee
1999 - 2001	Constitution and By Laws Committee, College of Engineering (elected)
1993 - 1995	Chairman of the Engineering Mechanics Area Doctoral Committee of the College of Engineering.
1993 - 1995	Constitution & By Laws Committee, College of Engineering (elected)
1993 - 1994	College of Engineering committee for workload policies.
1987 - 1993	Secretary of the Eng. Mechanics Doctoral Committee of the College of Eng; major contribution include the restructuring of the comprehensive exams.
1990 - 1992	Chairman, Merit Review Committee for the College of Engineering.
1991 - 1992	Chairman, Finance Committee, 1992 American Society Engineering Education (ASEE) local planning at UT.

SERVICE ON DEPARTMENTAL COMMITTEES (Univ. of Toledo)

2002 – 2007	ABET Committee, Dept. of Mech., Industrial and Manufacturing Eng.
2000 – 2007	Graduate Director, Dept. of Mech., Industrial and Manufacturing Eng.
1999 – 2005	Undergraduate Curriculum Committee, Dept. of Mech. Eng.
1999 – 2003	Mechanical Engineering Department Personnel Committee (elected)
1997 - 1998	Mechanical Engineering Department Personnel Committee (elected)
1994 - 1995	Founding Graduate Director, Dept. of Mech., Industrial & Manufacturing Eng.
1993 - 1995	Mechanical Engineering Department Personnel Committee (elected)

NATIONAL & INTERNATIONAL PROFESSIONAL ACTIVITIES

NATIONAL MEETINGS ORGANIZATIONS

1. Dr. Hefzy served as the Basic Engineering Group Representative to the 2005 ASME Int. Mechanical Engineering Congress and Exposition to be held in November 5-11, 2005 in Orlando, Florida.
2. Dr. Hefzy, and as Chair of the BioSolids Technical Committee of the BED, organized all BioSolid Sessions for the 2005 Summer Bioeng. Conference held in June 22-26, 2005 in Vail, Colorado.
3. Dr. Hefzy served as the Basic Engineering Group Representative and the Program Representative of the Bioengineering Division to the 2004 ASME International Mechanical Engineering Congress and Exposition held in November 14-19, 2004 in Anaheim, California.
4. Dr. Hefzy served as the Chairman of the Local Arrangements Committee and a member of the Steering Committee for the 2003 Summer Bioeng. Conference held in June 25-28, 2003, Miami, Fl.
5. Dr. Hefzy served as the Chairman of the Publication Committee as well as a member of the Steering Committee for the 2001 ASME Bioeng. Conference held in June 28-July 1, 2001 at Snowbird, Utah.
6. Dr. Hefzy served as Chair of the Biosolid Mechanics Technical Committee of the Bioengineering Division and organized 9 sessions for the 1999 ASME International Mechanical Engineering Congress and Exposition held in November 14-19, 1999 in Nashville, Tennessee, USA.
7. Dr. Hefzy served as the Chairman of the Publication Committee as well as a member of the Steering Committee for the 1997 ASME Bioeng. Conference held in June 11-15, 1997 at Sun River, Oregon.
8. Dr. Hefzy served as the Chairman of the Publication Committee as well as a member of the Steering Committee for the 1995 ASME Bioeng. Conference held in June 28-July 2, 1995 at Beaver Creek, Colorado, USA.
9. Dr. Hefzy and Dr. Farid Amirouche, from the University of Illinois, organized one session on "Joint Dynamics and Mechanics" for the Joint Mechanics Symposium at the 1993 ASME Winter Annual Meeting, Bioengineering Division, New Orleans, Louisiana, Nov. 28 - Dec. 3, 1993.
10. Dr. Hefzy and Dr. Subrata Saha, from Louisiana State University, organized five sessions as a Forum on Joint Mechanics for the 1991 Biomechanics Symposium at the ASME Applied Mechanics and Biomechanics conference held at Ohio State University, Columbus, Ohio, June 16-19, 1991.
11. Dr. Hefzy and Dr. Morton Friedman, from Ohio State University, organized the First All-Ohio Biomechanics Student Poster Session which was held at the ASME Summer Annual Meeting as part of the 1991 Biomechanics Symposium at the Ohio State University Campus on June 16, 1991.
12. Dr. Hefzy, Dr. Patwardhan and Dr. Vanderby, from Loyola University organized five sessions for the "Joint Mechanics" Symposium for the 1989 ASME Winter Annual Meeting, Bioengineering Division, held at San Francisco, California, Dec. 10-15, 1989.

PROFESSIONAL REVIEW ACTIVITIES

- Dr. Hefzy is an *ASME/ABET Mechanical Engineer Evaluator*.
- In addition, he is a reviewer for the following journals and organizations:

Journal of Biomechanical Engineering (ASME),	1983 - present.
Clinical Journal of Sports Medicine	1995 - 1999
Journal of Orthopaedic Research,	1988 - present
Journal of Investigative Surgery	1991
National Science Foundation	Ad hoc reviewer since 1993.
Ohio Super Computer	May 1993, June 1993, June 1996
National Institute of Health, Special Study Section.	December 1983

NATIONAL & INTERNATIONAL PROFESSIONAL ACTIVITIES

SERVICE & COMMITTEE MEMBERSHIPS

Dr. Hefzy is a very active member at the local and national level of the American Society of Mechanical Engineers (ASME). Dr. Hefzy has also been active at the Toledo Society of Professional Engineers. Specifically, Dr. Hefzy has been an active member of the following committees:

American Society of Mechanical Engineers: (ASME)

2011 - 2015	Member of the Basic Engineering Group Operating Board, ASME
2007 – 2013	Treasurer and Member of the EC of the Bioengineering Division
2004 – 2007	Chair, BioSolids Technical Committee, Bioengineering Division.
2003 – 2005	Member of the National Nominating Committee, 1 st alternate
2002 – 2003	Member of the National Nominating Committee, 2 nd alternate
2004	Member, NIH Task Force, Inter-Council Committee on Federal R&D FY 2005 Budget Review, ASME International
2003	Member, NIH Task Force, Inter-Council Committee on Federal R&D FY 2004 Budget Review, ASME International
2002	Chairman, NIH Task Force, Inter-Council Committee on Federal R&D FY 2003 Budget Review, ASME International
2001	Member of the National Nominating Committee, voting member
2001	Chairman, NIH Task Force, Inter-Council Committee on Federal R&D FY 2002 Budget Review, ASME International
2000	Participant in the Science-Engineering-Technology Congressional Visits Day
2000	Chairman, NIH Task Force, Inter-Council Committee on Federal R&D FY 2001 Budget Review, ASME International
1999 – 2002	Member of the Executive Committee of the Bioengineering Division, External Affairs
1995 - 1999	Secretary, Solid Mechanics Committee, Bioeng. Division
1987 - present	Solid Mechanics Committee, Bioengineering Division
1992 - 1995	Executive Committee, Northwest Ohio Section
1987 - 1991	Joint Biomechanics Committee
1984 - 1985	Secretary and Founder of the West Michigan Group of ASME.
1984 - 1985	Board of Directors of the Central Michigan Section of ASME.

Toledo Society of Professional Engineers: (TSPE)

1991	Chair, Publication Committee of the "1991 Engineers Week"
1989 - 1991	Editor of Toledo Engineer.
1989 - 1990	Board of Trustees
1988 - 1989	Scholarship and Publication Committees

AWARDS & RECOGNITION

- 2011 ASME Dedicated Service Award
- Edith Rathbun Award for Excellence in Outreach and Engagement in recognition for exceptional community outreach and engaged scholarship, The University of Toledo, April 2006.
- University of Toledo Outstanding Faculty Research Award, April 2004.
- Fellow of American Society of Mechanical Engineers, December 2003.
- Outstanding Undergraduate Research Mentorship, Award, College of Eng., Univ. of Toledo, May 2001.
- Outstanding Teacher Award, College of Engineering, The University of Toledo, May 1999.
- Listed in the International Directory of Distinguished Leadership, Sixth Edition, 1997.
- 1988 O'Donoghue Sports Injury Research Award from the American Orthopaedic Society of Sports Medicine, June 1988.
- Membership in the "Evening College 5 year club" for teaching service at the University of Cincinnati Evening College, May 1987.
- Listed in " WHO IS WHO " in Frontier Sciences & Technology, 1st ed., 1984-85.
- Certificate of Recognition and \$100.00 Award from the National Aeronautic and Space Administration, NASA, 1981.
- Membership Award in the American Society of Experimental Stress Analysis, 1977-78.
- University Graduate Scholarship, Sept. 76 - June 1981, Univ. of Cincinnati, Department of Aerospace Engineering & Applied Mechanics.

RECENT WORKSHOPS AND CONTINUING EDUCATION

1. Dr. Hefzy has been awarded 7.25 Professional Development Hours for attendance and successful completion of courses at the 2010 Annual RESNA Conference and the Second International Symposium on Quality of Life Technology, Red Rock Spa, June 28-29, 2010, Las Vegas, Nevada.
2. Dr. Hefzy has been awarded 5.5 Professional Development Hours by the ASME Santa Clara Valley Section & District for attending the "Non-Linear Finite Element Analysis using ABAQUS" course, attended online on March 20, 2010.
3. Dr. Hefzy successfully completed the "2009 Entrepreneurial Boot Camp" organized by the Regional Growth Partnership's Rocket Ventures Program of Northwest Ohio and The University of Toledo, April 17, 2009.
4. Dr. Hefzy has been awarded 11.5 Professional Development Hours for attendance at the ASME 2008 Leadership Training Conference which was offered as part of ASME's volunteer leadership development, March 7-8, 2008.