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University of Central Florida

# WALDEMAR KARWOWSKI

Pegasus Professor and Chair, Department of Industrial  
Engineering & Management Systems

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**I. PERSONAL****1. Degree and Professional Registration Information**

Doctor of Science (dr hab.) in Management Science, State Institute for Organization and Management in Industry, Warsaw, Poland, June 2004.

Ph.D. in Industrial Engineering, Department of Industrial Engineering, Texas Tech University, Lubbock, Texas, December 1982.

*Doctor of Science (Honoris Causa)*, South Ukrainian State Pedagogical University, Odessa, Ukraine, 2004.

*Doctorate in Engineering (Honoris Causa)*, Technical University of Kosice, Kosice, Slovakia, 2006.

*Doctorate in Engineering (Honoris Causa)*, Moscow State Institute of Radio, Electronics and Automation (MIREA Technical University), Moscow, Russia, 2007.

M.Sc. in Production Engineering (with highest honors), School of Management and Information Sciences, Technical University of Wroclaw, Wroclaw, Poland, 1978.

CPE, Certified Professional Ergonomist, Certificate N 341, Board of Certification in Professional Ergonomics

P.E., Registered Professional Engineer (State of Texas, License No 61616)

**2. Employment**

Professor and Chairman, Department of Industrial Engineering and Management Systems, University of Central Florida, Orlando, Florida (8/1/2007-present).

Executive Director, Institute for Advanced Systems Engineering, University of Central Florida, Orlando, Florida (8/1/2008-present).

Professor, Department of Industrial Engineering, J. B. Speed School of Engineering, University of Louisville, Louisville, Kentucky (7/1/1993 – 7/31/2007).

Director, Center for Industrial Ergonomics, J. B. Speed School of Engineering, University of Louisville, Louisville, Kentucky (7/1/1987 – 7/31/2007).

Senior Graduate Faculty, Graduate School, University of Louisville, Louisville, Kentucky (1985 - 2007).

Associate Faculty, Department of Bioengineering, J. B. Speed School of Engineering, University of Louisville, Louisville, Kentucky (7/1/2006 – 7/31/2007).

Research Fellow, ASSE Foundation / Liberty Mutual Research Institute for Safety, Hopkinton, Massachusetts (Fall 2006).

J. B. Speed School of Engineering *Alumni Scholar for Research*, University of Louisville, Louisville, Kentucky (2004-2006).

Distinguished Visiting Scholar and Assistant Director for International Cooperation, Central Institute of Labor Protection, Warsaw, Poland (8/15/1998 –12/31/1998).

Associate Professor, Department of Industrial Engineering, J. B. Speed School of Engineering, University of Louisville, Louisville, Kentucky (7/1/1987 - 6/31/1993). Award of Tenure: 7/1/1988

Fulbright Scholar and Visiting Professor, Occupational Safety Engineering, Tampere University of Technology, Tampere, Finland (9/1/1990-4/30/1991).

Visiting Assistant Professor, Department of Industrial Engineering, Iowa State University, Ames, Iowa (8/1/1982 - 5/30/1983).

Assistant Professor, Department of Industrial Engineering, J. B. Speed School of Engineering, University of Louisville, Louisville, Kentucky (6/1/1983 - 5/30/1987).

Associate in the Department of Psychology, University of Louisville, Kentucky (1985 - 1991).

Research Assistant, Department of Industrial Engineering, Texas Tech University, Lubbock, Texas (9/1/1979 - 7/30/1982).

Research Associate and Teaching Assistant, Institute of Production Engineering and Systems Management, Technical University of Wroclaw, Wroclaw, Poland (10/1978 - 8/1979).

### **3. Other Professional Training**

Industrial Trainee, ELWRO: Computer Manufacturing Company, Wroclaw, Poland (Summer of 1976).

Industrial Trainee, DOLMEL: Electrical Machines Factory, Wroclaw, Poland (Summer of 1977).

## **II. PROFESSIONAL ACTIVITIES**

### **1. Scientific and Honor Societies**

Fellow, International Ergonomics Association (IEA), elected in 2003

Fellow, Institute of Industrial (and Systems) Engineers (IIE), elected in 2001.

Fellow, Human Factors and Ergonomics Society (HFES), elected in 1995.

Fellow, The Ergonomics Society-The Chartered Institute of Ergonomics and Human Factors (United Kingdom): F.Erg.S, elected in 2002.

Full Academic Member, The Academy of Management (USA)

Member, American Psychological Association (APA)

Member, American Society for Engineering Education (ASEE)

Member, IEEE / Systems, Man & Cybernetics Society

Professional Member, American Association for the Advancement of Science (AAAS)

Member, International Society for Industrial Ergonomics and Safety (ISOES)

Member, Society for Chaos Theory in Psychology & Life Sciences

Member, Committee on Ergonomics, Polish Academy of Science (2003-2006)

Listed in *Who's Who in America*, 57<sup>th</sup> Edition, 2002

Listed in *The Roll of Honour of the Polish Science*, 2002

Listed in *Empire Who's Who in Education*, 2005-2006: Executive and Professional Registry

Listed in *Marquis Who's Who in American Education*, 7<sup>th</sup> edition, 2006-2007

Listed in *Academic Keys Who's Who in Engineering Education (WWEE)*, 2006-2007

Listed in *Marquis Who's Who in the World*, 2007, 2008, 2009.

## 2. Professional Distinctions and Awards

William Floyd Award "For outstanding and innovative contributions to ergonomics and human factors" from the Chartered Institute of Ergonomics & Human Factors, United Kingdom, April 2017.

*Pegasus Professor Award*, the highest academic honor at the University of Central Florida, 2016.

*National Professorship Award* by the President of the Republic of Poland, 2012.

*Member, Board on Human Systems Integration*, National Research Council: National Academy of Sciences, USA (2009-2011).

*Member, Committee on Human Factors*, National Research Council: National Academy of Sciences, USA (2007-2009).

*Vice-President, Committee of Ergonomics of the Polish Academy of Science*, Warsaw, Poland (2008-2010).

*Member, Board of Directors, Council of Scientific Society Presidents*, Washington, D.C. (2007-2009).

*Research Fellow*, ASSE Foundation and Liberty Mutual Research Institute For Safety - Research Fellowship Program, Hopkinton, MA, Fall 2006.

*Alumni Scholar for Research 2004-2006*, J. B. Speed School of Engineering, University of Louisville.

*Jack. A. Kraft Award*, Human Factors and Ergonomics Society, USA, 2004.

*Honorary Academician*, Member of the *International Academy of Human Problems*, No, 47, Moscow, Russia, November 27, 2003.

*Best Reference Award for 2002*, Engineering Libraries Division, American Society of Engineering Education (for the *International Encyclopedia of Ergonomics and Human Factors*).

*Outstanding Academic Title for 2002* by Choice Magazine (for the *International Encyclopedia of Ergonomics and Human Factors*, 2001).

*Distinguished Achievement Award*, 2002, International Society for Occupational Ergonomics and Safety.

President's Award, 2001, *Distinguished Service* (International Category), University of Louisville.

*Pro Labore Securo*, 2000; CIOP, Warsaw, Poland (the highest recognition for contributions to occupational safety and health in Poland).

*Alumni Scholar for Research Finalist*, 2000-2003, Speed School of Engineering, University of Louisville.

*Wojciech Jastrzebowski Medal for Lifetime Achievements*, 1995, Polish Ergonomics Society, Poland.

President's Award, 1995, *Outstanding Scholarship, Research and Creative Activity in the Category of Basic and Applied Science*, University of Louisville.

*Certificate of Nomination*, 1992, Speed Scientific School of Engineering for the Presidential Award for Outstanding Scholarship, Research and Creative Activity, University of Louisville.

Fulbright Scholar and Visiting Professor, 1990-1991, Tampere University of Technology, Tampere, Finland.

*Outstanding Young Engineer of the Year Award*, 1989, Institute of Industrial Engineers, Atlanta.

Outstanding Industrial Engineer Award, 1988, Louisville Chapter 18 of the Institute of Industrial Engineers, Louisville, Kentucky.

### **3. Professional Leadership Activities**

President, Orlando Chapter, International Council on Systems Engineering (INCOSE) 2015-2016

Vice-President, Orlando Chapter, International Council on Systems Engineering (INCOSE) 2014-2015

Member, Board of Directors, Orlando Chapter, International Council on Systems Engineering (INCOSE) 2012-2013

Member, Board of Directors, Foundation for Professional Ergonomics, 2014-present

President, Human Factors and Ergonomics Society (HFES), 2007.

Member, Board of Directors, *American Association of Engineering Societies (AAES)*, 2006-2007.

Member, Board of Directors, *Board of Certification in Professional Ergonomics (BCPE)*, 2003-2006.

President, International Ergonomics Association, 2000 - 2003.

Secretary-General, International Ergonomics Association, 1997 - 2000.

Chair, Council of Technical Groups, Human Factors and Ergonomics Society, 1996-1997.

Chair, Human Factors and Ergonomics Society (HFES) Sub-Committee for the HFES Distinguished Foreign Colleague Award, 1995 – 2005.

Member, Accreditation Review Committee for Graduate HF/E University Programs, Human Factors and Ergonomics Society, 1999-2002.

Chair, Promotion and Publication Committee, International Ergonomics Association, 1994 - 1997.

Representative of the Human Factors Society to the International Ergonomics Association, and voting USA member of the IEA Council, 1991-1994 and 1994-1997.

Member, Awards Committee, Human Factors and Ergonomics Society, 1993-1997.

Member, Human Factors and Ergonomics Society (HFS) Sub-Committee for the HFES Distinguished Foreign Colleague Award, 1991-1994.

President, International Foundation for Industrial Ergonomics and Safety Research, 1992-1993.

Chair and US Tag Representative for TC159/ SC-3: Committee on Anthropometry and Biomechanics, International Standards Organization, Human Factors and Ergonomics Society, 1994-1996.

Member, Alpha Pi Mu (Industrial Engineering Honorary).

Member, Tau Beta Pi (Engineering Honorary).

### **4. Journal Editorship and Board Membership**

Founder and Co-Editor-in-Chief, *Theoretical Issues in Ergonomics Science*, 2000 – present.

Co-Editor, *International Journal of Occupational Safety and Ergonomics*, 1994 - present

Associate Editor, *International Journal of Learning and Intellectual Capital*, 2006 - present.

Co-Editor, *The Open Cybernetics and Systemics Journal*, 2007- present.

Member, Editorial Board, *Applied Ergonomics*, 1998 - present.

Member, Editorial Board, *International Journal of Human-Computer Interaction*, 1989 - present.

Member, Editorial Board, Fuzzy Sets and Systems, 2002 - present.

Member, Editorial Board, Universal Access to the Information Society, 2000 - present.

Consulting Editor, Occupational Ergonomics, 1997 - 2002; Editorial Board: 2003 – 2017.

Member, Advisory Board, Management and Production Engineering Review (Poland), 2010 - present.

Member, Editorial Board, ISRN Industrial Engineering, 2013 - present

Member, Editorial Board, The Open Industrial & Manufacturing Engineering Journal, 2012 - present.

Member, Editorial Board, International Journal of Strategic Change Management, 2010 - present.

Member, Editorial Board, Economics and Business Administration Journal (Poland), 2010 - present.

Member, Editorial Board, The Open Ergonomics Journal, 2007-present

Member, Editorial Board, The Open Industrial and Manufacturing Engineering Journal, 2007 - present

Member, Editorial Board, Foundations of Control and Management Sciences (Poland), 2004 – present.

Member, Editorial Board, The Polish Journal of Aviation Medicine, Bioengineering and Psychology (in English), 2014 – present.

Member, Editorial Board, Ergonomia (Italy), 2005 - present.

Member, Editorial Board, Industrial Engineering Research: (Hong Kong, in English), 1997 – present.

Editor-in-Chief, Theoretical Issues in Ergonomics Science, 2000 - 2014.

Co-Editor, Human Factors and Ergonomics in Manufacturing & Service Industries, 2009 - 2015.

Co-Editor, Human Factors and Ergonomics in Manufacturing, 1997 - 2009.

Senior Editor, Ergonomia: An International Journal of Ergonomics and Human Factors (in English; published by the Polish Academy of Science), 2003- 2012.

Member, Editorial Board, Economics and Organization of an Enterprise (in Polish, ORGMASZ, Warsaw), 2002 – 2015.

Member, Editorial Board, Human Factors, 1997 - 2014.

Consulting Editor, Ergonomics, 1996 - 2006.

Member, Editorial Team, Ergonomics, 1995 - 1996.

Editor, Rapid Communications of Ergonomics, 1991 - 1995.

Associate Editor, International Journal of Industrial Ergonomics, 1986 - 1989.

Member, Editorial Board, Journal of Intelligent & Fuzzy Systems, 1996 - 1999.

## **5. Keynote and Plenary Addresses and Guest Lectures**

Invited Keynote Address, 20<sup>th</sup> World Congress on Ergonomics International Ergonomics Conference, IEA 2018, Florence, August 26-30, 2018.

Invited Plenary Speaker, 17<sup>th</sup> International Conference on Occupational Risk Prevention, Buenos Aires, Argentina, 30 October- 1 November, 2017.

Invited Plenary Speaker, 16<sup>th</sup> International Conference on Occupational Risk Prevention, Cartagena, Colombia, 5-7 October, 2016.

Invited Plenary Speaker, 14<sup>th</sup> International Conference on Occupational Risk Prevention, Zaragoza, Spain, May 21-23, 2014.

Invited Plenary Speaker, 11<sup>th</sup> International Conference on Occupational Risk Prevention, Santiago, Chile, 3-5 April, 2013.

Invited Keynote Address, The challenges of Human-Systems Integration in a complex world: understanding emergent properties of Human-Systems Interactions, IEA 2012 18th World Congress on Ergonomics International Ergonomics Conference, Recife, Brazil 2012.

Invited lecture at Auburn University, Department of Industrial and Systems Engineering, April 14, 2011: Understanding Complex Human-Systems Interactions: A System of Systems Engineering Perspective.

Invited Keynote Speaker, Annual Meeting of the Ergonomics Society of Taiwan, Taipei, Taiwan, October 5-7, 2011.

Invited Plenary Speaker, 7<sup>th</sup> International Conference on Occupational Risk Prevention, Santiago, Chile, November 24-27, 2009.

Invited Workshop Speaker, NEW OSH ERA Forum on new and emerging risks at work: Towards a sustainable working life, European Union OSH Agency, Brussels, Belgium, October 29-30, 2009.

Invited Plenary Speaker, 6<sup>th</sup> International Conference on Occupational Risk Prevention, Coruna, Spain, May 14-17, 2008.

Invited Plenary Speaker, 55<sup>th</sup> Annual Congress of the German Work Science Society (GfA), Munich, Germany, April 9-11, 2008.

Invited Plenary Address, 11<sup>th</sup> International Conference on Human Aspects of Advanced Manufacturing Agility and Hybrid Automation - HAAMAHA 2007, jointly with the 3rd International Conference on Managing Enterprise of the Future, Poznan, Poland, July 9-12, 2007.

Invited Plenary Speaker, Intranet Russia 2007, Global Forum, Moscow, Russia, April 25-27, 2007.

Invited Plenary Lecture, International Symposium on Human Factors and Comprehensive Management Concepts as Precondition for Corporate Sustainability, University of Kaiserslautern, Germany, March 16, 2007.

Invited Plenary Speaker, 38th Annual Congress of the Nordic Ergonomics Society (NES), Hämeenlinna, Finland, September 24-27, 2006.

Invited Plenary Speaker, 4<sup>th</sup> International Conference on Occupational Risk Prevention, Sevilla, Spain, May 10-12, 2006.

Invited Keynote Address, International Conference on Computer-Aided Ergonomics, Human Factors and Safety: Information Technology, Knowledge Management and Engineering, Technical University of Kosice, Slovakia, May 25-28, 2005.

Invited Plenary Address, International Conference on Ergonomics of Health Care and Patient Safety, Florence, Italy, April 1, 2005.

Invited Distinguished Lecture Speaker, WKF Research Colloquium, University of Siegen, Siegen, Germany, December 20, 2004.



Invited Distinguished Speaker, Guest Lecture Series, The Institute for Ergonomics, Ohio State University, Columbus, Ohio, December 2, 2004.

Plenary Address, 9<sup>th</sup> International Conference on Human Aspects of Advanced Manufacturing and Virtual Enterprise, HAAMAHA 2004, Dublin, Ireland, August 24-28, 2004.

Invited Plenary Speaker, 3<sup>rd</sup> International Conference on Occupational Risk Prevention, Santiago de Compostela, Galicia, Spain, June 2-4, 2004.

Invited Lecture, Inyong Ham Distinguished Lecture Series, Penn State University, PA, October 30, 2003.

Presidential Address, XV- th Triennial Congress of the IEA and The 7th Joint Conference of Ergonomics Society of Korea/Japan Ergonomic Society, Seoul, Korea, August 24-29, 2003.

Invited Keynote Address, 8<sup>th</sup> International Conference on Human Aspects of Advanced Manufacturing and Hybrid Automation, HAAMAHA 2003, Rome, Italy, June 27-30, 2003.

Invited Opening Address, IEA Symposium on Ergonomics, Santiago, Chile, September 2-4, 2002.

Invited Keynote Address, International Symposium on Ergonomics as a Science and the Subject of University Studies, Polish Academy of Science, Committee on Ergonomics, Poznan, Poland, June 21, 2002.

Invited Keynote Address, Annual Meeting of the Japan Ergonomics Society, Hiroshima, Japan, June 1-4, 2002.

Invited Plenary Address, 2<sup>nd</sup> International Conference on Occupational Risk Prevention, Gran Canaria Island, Spain, February 20-22, 2002.

Invited Opening Plenary Address, International Conference on Affective Human Factors Design, Singapore, June 27, 2001.

Invited Plenary Address, International Conference on Ergonomics and Safety for Global Business Quality and Productivity, Central Institute for Labour Protection, Warsaw, Poland, May 16, 2000.

Invited Plenary Address, International Symposium: Strengths and Weaknesses, Threats and Opportunities of Ergonomics in Front of 21<sup>st</sup> Century, Athens, Greece, September 1, 1999.

Invited Plenary Address, Global Ergonomics Conference, September 9, 1998, Cape Town, South Africa.

Invited Plenary Address, ASEAN Ergonomics 1997 Annual Conference, November 6, 1997, Kuala Lumpur, Malaysia.

Invited Plenary Address, Anniversary Conference of the Ergonomics Committee, Polish Academy of Sciences, Krakow, Poland, October 21, 1997.

Chairman and Speaker, Invited Plenary Session, The 4th Pan-Pacific Conference on Occupational Ergonomics, Taipei, Taiwan November 11, 1996.

Invited Plenary Address, IEA World Conference 1995 on Ergonomic Design and 3rd Latin American Ergonomics Congress, Rio de Janeiro, Brazil, October 16, 1995.

Invited Plenary Address, Fourth International Scientific Conference on Work with Display Units, Milan, Italy, October 2-4, 1994.

Invited Keynote Address, *The 8th Annual Conference of Japanese Society for Fuzzy Theory and Systems*, Hiroshima, Japan, May 26-28, 1992.

Invited Plenary Address, *International Conference on Computer-Aided Ergonomics, Safety and Health*, Tampere, Finland, May 18-20, 1992.

Invited Plenary Address, *SRE Symposium on Reliability & Safety of Processes and Manufacturing Systems*, Tampere, Finland, October 1-3, 1991.

Invited Keynote Address, 11<sup>th</sup> Congress of the International Ergonomics Association, Paris, France, July 15-18, 1991.

### III. EDUCATION

#### 1.1. Educational Leadership

- Dual BSIE degree program with Universidad San Ignacio de Loyola (USIL) in Lima, Peru. ***This is the first international dual degree for any program at UCF.*** The first cohort began in March 2015 and graduated in August 2016.
- MS in Healthcare Systems Engineering track, University of Central Florida, fully online program to begin in Fall 2018.
- Northrop Grumman/UCF collaboration to create a pipeline of graduates with master planning and scheduling skills. Northrop Grumman would initiate an UG intern program (CWEP) and participate in the graduate cohort engineering management program (MSEM)
- IdeaLab/InnovationLab, supported the efforts by Dr. Kotnour, IEMS Professor, who secured UCF's technology grant in the amount of \$287,778.43 , with additional funding from a grant from Texas Instruments of over \$500,000. The Gathering Lab, IdeaLab, and Innovation Lab concepts have been fully implemented and successfully running since opening in fall 2014.
- Continuing Education workshops, Workplace Safety and Columbian - Logistics Program. The programs, taught by IEMS instructors, Dr. Gene Lee and Luis Rabelo, are short courses were offered for a cohort of Columbian working professionals one in the area of occupational safety and health (including ergonomics) and one in logistics. Summer 2015

#### 1.2. Teaching

##### Department of Industrial Engineering and Management Systems, UCF

- ESI 6891 Research Methods (Graduate)

##### Department of Industrial Engineering, University of Louisville

- IE 340, Work Measurement and Methods (Undergraduate)
- IE 480, Human Factors Engineering (Undergraduate)
- IE 530, Industrial Safety Engineering (Undergraduate)
- IE 570, Engineering Design Economics (Undergraduate)
- IE 575, Fuzzy Sets and Systems (Graduate/Professional)
- IE 680, Human Factors Engineering (Graduate)
- IE 681, Human Performance (Graduate)
- IE 683, Design of Human-Machine Systems (Graduate)
- IE 683, Cognitive Systems Engineering (Graduate)
- IE 685, Human Reliability (Graduate)
- IE 687, Human Aspects of Advanced Manufacturing (Graduate).

## IV. RESEARCH

As of 4/1/18: a total of over 8,600 citations, with Google Scholar h-index of 46 and i10-index of 183.

Research profile on Google Scholar: <http://scholar.google.com/citations?user=G01IsFAAAAJ&hl=en>

### 1a. Publications: peer-review journals

1. Karwowski, W. and Ayoub, M. M., 1984, Fuzzy Modeling of Stresses in Manual Lifting Tasks, *Ergonomics*, 27 (6), 641-649.
2. Karwowski, W., Ayoub, M. M., Alley, L. R. and Smith, J. L., 1984, Fuzzy Approach in Psychophysical Modeling of Human Operator-Manual Lifting System, *Fuzzy Sets and Systems*, 14 (1), 65-76.
3. Karwowski, W. and Evans, G.W., 1986, Fuzzy Concepts in Production Management Research - A Review, *International Journal of Production Research*, 24 (1), 129-147.
4. Karwowski, W. and Yates, J. W., 1986, Reliability of the Psychophysical Approach to Manual Lifting of Liquids by Females, *Ergonomics*, 29 (2), 237-248.
5. Karwowski, W. and Mital, A., 1986, Development of a Safety Index for Manual Lifting Tasks, *Applied Ergonomics*, 17 (1), 58-64.
6. Mital, A. and Karwowski, W., 1986, Towards the Development of Human Work-Performance Standards in Human-machine Systems: A Fuzzy Modeling Approach, *Fuzzy Sets and Systems*, 19 (2), 133-147.
7. Karwowski, W. and Mital, A., 1986, Potential Applications of Fuzzy Sets in Industrial Safety Engineering, *Fuzzy Sets and Systems*, 19 (2), 105-120.
8. Mital, A., Karwowski, W., Mazouz, A. and Orsarh, E., 1986, Prediction of Lifting Capabilities in the Horizontal and Vertical Planes Using Simulated Job Dynamic Strengths, *American Industrial Hygiene Association Journal*, 47 (5), 288-292.
9. Karwowski, W. and Mital, 1986, A., Isometric and Isokinetic Testing of Lifting Strength of Males in Teamwork, *Ergonomics*, 29, 869-878.
10. Karwowski, W., Mulholland, N. O., Ward, T. L., Jagannathan, V. and Kirchner, R. L., 1986, LIFTAN: An Experimental Expert System for Analysis of Manual Lifting Tasks, *Ergonomics*, 29, 1213-1234.
11. Mital, A., Aghazadeh, F. and Karwowski, W., 1986, Relative Importance of Isometric and Isokinetic Lifting Strengths in Estimating Maximum Lifting Capabilities, *Journal of Safety Research*, 17, 65-71.
12. Karwowski, W., Mulholland, N. O., Ward, T. L. and Jagannathan, V., 1987, A Fuzzy Knowledge Base of an Expert System for Analysis of Manual Lifting Tasks, *Fuzzy Sets and Systems*, 21, 363-374.
13. Mital, A., Karwowski, W. and Chalaka, A., 1987, Laboratory Simulation of Self-Paced and Force-Paced Industrial Stacking and Palletizing Tasks, *Journal of Human Ergology*, 16, 20-34.
14. Karwowski, W., Mital, A., Palenque, L. E. and Ward, T. L., 1987, Development of the Microcomputer-based Expert System for Analysis of Manual Materials Handling Tasks in Industrial Settings, *International Journal of Industrial Ergonomics*, 2, 49-59.
15. Yates, J. W. and Karwowski, W., 1987, Maximum Acceptable Lifting Loads During Seated and Standing Work Positions, *Applied Ergonomics*, 18, 239-243.

16. Evans, G.W., Wilhelm, M.R. and Karwowski, W., 1987, A Layout Design Heuristics Employing the Theory of Fuzzy Sets, *International Journal of Production Research*, 25, 1431-1450.
17. Karwowski, W. and Pongpatanasuegsa, N., 1988, Testing of Isometric and Isokinetic Lifting Strengths of Untrained Females in Teamwork, *Ergonomics*, 31, 291-301.
18. Marek, T., Noworol, C. and Karwowski, W., 1988, Mental Fatigue at Work and Pain Perception, *Work and Stress*, 2, 133-137.
19. Karwowski, W., Rahimi, M. and Mihaly, T., 1988, Effects of Computerized Automation and Robotics on Safety Performance of a Manufacturing Plant, *Journal of Occupational Accidents*, 10, 217-233.
20. Mital, A. and Karwowski, W., 1989, Prediction of Isometric and Isokinetic Strengths of Males in Teamwork: Further Applications of GMDH, *International Journal of Computers in Industrial Engineering*, 16, 145-159.
21. Karwowski, W. and Rahimi, M., 1989, Work Design and Work Measurement: Implications for Advanced Production Systems, *International Journal of Industrial Ergonomics*, 4, (4), 185-194.
22. Rahimi M. and Karwowski, W., 1990, A Research Paradigm in Human-Robot Interaction, *International Journal of Industrial Ergonomics*, 5 (1) 59-72.
23. Karwowski, W., Kosiba, E., Benabdallah, S. and Salvendy, G., 1990, A Framework for Development of Fuzzy GOMS Model for Human-Computer Interaction, *International Journal of Human-Computer Interaction*, 2(4), 287-305.
24. Rahimi, M. and Karwowski, W., 1990, Human Perception of Safe Speed and Idle Time of Industrial Robots, *Behaviour and Information Technology*, 9 (5), 381-389.
25. Karwowski, W., Rahimi, M., Parsaei, H., Amarnath, B. and Pongpatanasuegsa, N., 1991, The Effect of Simulated Accident on Worker Safety Behavior Around Industrial Robots, *International Journal of Industrial Ergonomics*, 7 (3), 229-240.
26. Karwowski, W., 1991, Psychophysical Acceptability and Perception of Load Heaviness by Females, *Ergonomics*, 34 (4), 487-496.
27. Karwowski, W. and Rahimi, M., 1991, Worker Selection of Safe Speed and Idle Condition in Simulated Monitoring of Two Industrial Robots, *Ergonomics*, 34 (5), 531-546.
28. Karwowski, W., 1991, Complexity, Fuzziness and Ergonomic Incompatibility Issues in the Control of Dynamic Work Environments, *Ergonomics*, 34 (6), 671-686.
29. Ward, T. L., Ralston, P., Karwowski, W. and Hall, W. D., 1991, ITONUS: Expert System for Machining on a Lathe, *Journal of Intelligent Manufacturing*, 2, 353-363.
30. Karwowski, W., 1991, New Perspectives on Human Factors in the Design and Management of Advanced Manufacturing Systems: A Review, *The Japanese Journal of Ergonomics*, 27 (6), 301-312.
31. Yates, J. W. and Karwowski, W., 1992, An Electromyographic Analysis of Seated and Standing Lifting Tasks, *Ergonomics*, 35 (7-8), 889-898.
32. Genaidy, A., Hidalgo, J. and Karwowski, W., 1992, A Comparative Study of the Myoelectric Amplitude Characteristics for Weight-Holding Tasks, *Journal of Human Ergology*, 21 (4), 35-48.
33. Karwowski, W., Shumate, C., Yates, J. W., and Pongpatana, N., 1992, Discriminability of Load Heaviness in Manual Lifting: Implications for the Psychophysical Approach, *Ergonomics*, 35 (7-8), 729-744.

34. Genaidy, A., Karwowski, W., Guo, L., Hidalgo, J. and Garbutt, G., 1992, Physical Training: A Tool for Increasing Work Tolerance Limits of Employees Engaged in Manual Handling Tasks, *Ergonomics*, 36 (9), 1081-1102.
35. Marek, T., Noworol, C., Wos, H., Karwowski, W. and Hamiga, K., 1992, Muscular Loading and Subjective Ratings of Muscular Tension Experienced by Novices When Typing with Standard and Split-Design Computer Keyboards, *International Journal of Human-Computer Interaction*, 4 (4), 387-394.
36. Karwowski, W., 1992, The Human World of Fuzziness, Human Entropy, and the Need for General Fuzzy Systems Theory, *Journal of Japan Society for Fuzzy Theory and Systems*, 4 (5), 825-841.
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180. Ahram, T. Z., Karwowski, Amaba, B., Fechtelkotter, P., 2015. Systems Engineering Approach For Managing Technology Complexity", Human Factors, Instrumentation and Controls Division (HFICD) of the American Nuclear Society, Nuclear Plant Instrumentation Control and Human Machine Interface Technologies (NPIC&HMIT 2015), February 23–26, 2015, Charlotte, North Carolina.
181. Karwowski, W., Ahram, T., 2015. Applications of Systems Dynamics and Neuro-Fuzzy Logic and to Model Complex Human Perception, In: Ergonomics in Design: Methods and Techniques. Eds. Marcelo M. Soares, Francisco Rebelo, CRC Press, Boca Raton, FL.
182. Ahram, T., Falcão, C., Barros, R., Soares, M., Karwowski, W., 2015. Neurodesign: Applications of Neuroscience in Design and Human-System Interactions, In: Ergonomics in Design: Methods and Techniques. Eds. Marcelo M. Soares, Francisco Rebelo, CRC Press, Boca Raton, Florida.
183. Çakit, W., Karwowski, W., 2015. Understanding patterns of infrastructure development in the active war theater of Afghanistan over the period 2002-2010. Procedia Manufacturing, Elsevier, Vol. 3, pp. 3876-3882.
184. Ahram, T., Karwowski, W., Sala-Diakanda, S. and Jiang, H., 2016. Modeling Decision Flow Dynamics for the Reliable Assessment of Human Performance, Crew Size and Total Ownership Cost. In: V. Duffy (Ed.), Advances in Applied Digital Human Modeling and Simulation. Springer Series on Advances in Intelligent Systems and Computing (AISC), ISBN 978-3-319-41626-7, pp 117-129.
185. Glaspie, H. W., and Karwowski, W. 2017. Human Factors in Information Security Culture: A Literature Review. In: D. Nicholson (ed.), Advances in Human Factors and Cybersecurity. Proceedings of the International Conference on Applied Human Factors and Ergonomics, pp. 269-

280, Springer.

186. Ahram, T., Karwowski, W., & Muhs, K. 2017. Human Performance Variability in Task Execution Times Under Generic Human-System Integration Conditions in Naval Operations. In: R.L. Boring (Ed.), *Advances in Human Error, Reliability, Resilience, and Performance*. International Conference on Applied Human Factors and Ergonomics 2017. Springer, pp. 175-182, Springer,
187. Bedny, G., Bedny, I. and Karwowski, W., 2017, Studying Thinking in the Framework of SSAT. In: *Proceedings of the International Conference on Applied Human Factors and Ergonomics*, pp. 362-369, Springer.
188. Çakıt, E. and Karwowski, W., 2017, Understanding the Social and Economic Factors Affecting Adverse Events in an Active Theater of War: A Neural Network Approach. *Proceedings of the International Conference on Applied Human Factors and Ergonomics*, pp. 215-223, Springer.
189. Bedny I., Bedny G., Karwowski W. (2017) Complexity and Reliability as Basic Quantitative Characteristics of Computer Based Tasks. In: Hale K., Stanney K. (eds) *Advances in Neuroergonomics and Cognitive Engineering*. *Advances in Intelligent Systems and Computing*, vol 488. Springer, Cham. pp 361-373.
190. Zurada, J., Donghui, S., Karwowski, W., Guan, J., and Cakit, E. Detecting Adverse Events in an Active Theater of War Using Data Mining Techniques, *Proceedings of the Eighth International Conference on Business Intelligence and Technology (BUSTECH 2018)*, pp. 43-44, Barcelona, Spain, Feb 18-22, 2018.

## 2. GRANTS AND CONTRACTS

### 2a. External Research Grant Awards

1. Yates, J. W. and Karwowski, W. (Co-Principal Investigators) Maximum Acceptable Lifts in a Sitting Position, National Institute of Occupational Safety and Health (DHHS), \$14,970.00, May 1, 1986 - May 31, 1987, No. 1 R03 OH02229-01.
2. Karwowski, W. (Principal Investigator) and Yates, J.W., The Evaluation of Vehicle Trunk Dimensions, General Motors Corporation, Human Factors Canada Group, Pontiac, MI, \$14,404.00, April 1, 1987 - September 30, 1987.
3. Ward, T. L., Dressman, J. B., Karwowski, W. and Ralston, P., An Expert System for Adaptive Control of Unattended Machine Tools, The Center for Robotics and Manufacturing Systems, University of Kentucky, Lexington, KY, \$69,032.00, July 1, 1987 - June 30, 1988.
4. Karwowski, W. (Principal Investigator), Special Design Recommendations for Vehicle Trunk Design, General Motors Corporation, Human Factors Canada Group, Pontiac, MI, \$12,530.00, 05-12, 1988.
5. Karwowski, W. (Principal Investigator) Worker Perception of Hazardous Robotic Workstations, Safety and Occupational Health Study Section, National Institute of Occupational Safety and Health, (Assignment 1 R01 OH02568-01), \$26,539.00, June 1, 1988 - September 31, 1989.
6. Karwowski, W. (Principal Investigator) Reducing Repetitive Strain Injury Through Ergonomics Job Redesign, Keller Crescent, Evansville, IN, \$14,674.00, 1/15 - 5/1, 1990.
7. Thurmond, R. C. (PI), Karwowski, W., Futrell, A. W., Rude-Parkins, C., Raju, P.S., Braker, J., and Portes, P., Preliminary Study of End User Applications of 2-Way Interactive Video Services, Bell South Foundation, \$34,300.00, 10/15/1992 - 12/15/1992.

8. Karwowski, W. (Principal Investigator) and J. W. Yates, Ergonomic Review of Mail Carrier Satchel Design, United States Postal Service, Washington, D.C. (subcontract through Texas Tech University), \$126,319.00, 5/1/92-4/30/1993.
9. Karwowski, W. (Principal Investigator), Applications of Advanced Telecommunications Technology for a Distant Diagnosis of Occupational Hand Injury: A Feasibility Study, BellSouth Foundation, \$22,261.00, 7/1/1993 - 12/31/1993.
10. Karwowski, W., (Principal Investigator), Control of Low Back Injury, Liqui-Dri Foods, Inc., Louisville, KY, \$25,555.00, 5/15/1993-2/15/1994.
11. Graham, J., Karwowski, W. (Co-PI), and Parsaei, H. R., Concurrent Engineering for Occupational Safety & Health, NIOSH, \$100,000.00, 10/1/1993-9/29/94.
12. Karwowski, W., (PI), Prevention of Musculoskeletal Injury at Liqui-Dri, Inc., Liqui-Dri Foods, Inc., Louisville, KY, \$19,653.00, 8/1/94-1/31/95.
13. Graham, J., Karwowski, W. (Co-PI), and Parsaei, H. R., Concurrent Engineering for Occupational Safety & Health, NIOSH, \$99,977.00, 10/1/1994-9/29/1995.
14. Karwowski, W., (PI), Medical Ergonomics Analysis: Distribution and Delivery Work Methods Associated with Automated Mail Sortation Systems, USPS, \$220,025.00, 1/2/1996 - 6/30/1997.
15. Karwowski, W., (PI), The Effects of Thermal Environment on the Mission Critical Task Performance, US Army Research Laboratory, \$10,000.00, 5/15/1997 - 12/31/1997.
16. Karwowski, W., (PI), Validation of the Toyota process Manufacturing (UK) Procedure, Toyota Motor Manufacturing, Kentucky, Inc., \$200,000.00; 3/01/2000 - 6/31/2001.
17. Starr, T. (PI), Karwowski et al., Co-Investigator, Biometrics Signature Research Project, EWA Government Systems- GSI contract from the Department of Defense; \$510,150.00; 5/01/2005 – 4/30/2006.
18. Karwowski, W. (PI) and Zurada, J. M, Development of a Neuro-Fuzzy System to Predict Spinal Loading as a Function of Multiple Dimensions of Risk, DHHS-NIOSH / Ohio State University; \$455,609.00; 10/01/2002 - 9/31/2007. [Note: The above grant is part of the DHHS grant awarded to a consortium formed by The Ohio State University (W.S. Marras, PI) University of Louisville (W. Karwowski, PI) and University of Cincinnati (Davis, K., PI), total award for 2002-2007: \$1,438,661.00].
19. Starr, T. (PI), A. Farag, Karwowski, W., Quesada, P.M, et al., (Co-Is), Biometrics Signature Research Project: Phase II; EWA Government Systems, Inc.- Department of Defense; \$752,862.00; 19/28/2006 - 6/30/2008.
20. Nazzal, D. (PI), Karwowski, W. (Co-PI) and D. Reinhart (Co-PI), Integrating Sustainability into the Industrial Engineering Curriculum, National Science Foundation, \$98,372.00; 2010-2011.
21. *Karwowski, W. (PI), IBM Software Grant for Systems Engineering Laboratory, Institute of Advanced Systems Engineering" In-kind", (est. value \$2,000,000.00 not officially recorded by UCF), 2010.*
22. Karwowski, W. (PI) et al., System Redesign and Improvement Infrastructure in a Veterans Health Administration Medical Center, Orlando VAMC / Veterans Administration Medical Center, \$781,822.00, 2010 – 2012.
23. Karwowski, W. (PI), Characterization and Quantification of Economic Value of a Human and Human Performance and Total Ownership Cost of Naval Systems (ID: 1050886), Office of Naval Research, \$385,305.00, 2010-2012.

24. Karwowski, W. (PI), 2011 IBM Smarter Cities Outstanding Researcher, \$10,000.00; 9/30/2011 - 9/29/2012
25. Karwowski, W. (PI), IBM Community Impact Grant (STEM Education Award), \$10,000.00; 12/01/11 - 11/30/12.
26. Karwowski, W. (PI), GE Data Analysis: Modeling Consumer Sensitivity in Side by Side Refrigerators (ID: 1052528), \$16,139.00, 2012.
27. Karwowski, W. (PI), Complex Systems Engineering for Rapid Computational Socio-Cultural Network Analysis, Office of Naval Research, Award No.: N000141110934, \$266,635.00; 2011-2014.
28. Karwowski, W. (PI), Complex System Dynamics & Cost Estimation Modeling for the Reliable Assessment of Naval Systems Human Performance and Total Ownership Cost, Office of Naval Research, Award No. N000141210162, \$327,860.00, 2/01/2012-1/31/2014.
29. Karwowski, W. (PI), Modeling Human Performance in STAMPS, Office of Naval Research, Award N00014-14-1-0777, \$406,034.00, 2015-2018.
30. Salvendy, G. (PI) and Karwowski, W. (Co-PI), Empirical Testing of Library-GPII-System (RERC on Universal Interface), University of Maryland, \$107,141.00, 1/1, 2018 – 9/29, 2018.

## **2b. Funded Internal Research Grants**

1. Karwowski, W. (PI) and Yates, J. W., Analysis of Bi-manual Lifting Tasks, UofL Graduate Research Council Grant, \$3,000.00, October 1, 1983 - June 30, 1984.
2. Ward, T. L. and Karwowski, W., Initial Exploration of Work Measurement Theory, UofL Graduate Research Council Grant, \$3,977.00, 8/1/84 - 6/30/85.
3. Karwowski, W. (Principal Investigator) and Yates, J.W., A Psychophysical Study of the Maximum Acceptable Loads Lifted Horizontally and Vertically from a Sitting Position, UofL Graduate Research Council Grant, \$3,800.00, June 1, 1985 - May 31, 1986.
4. Karwowski, W. (Principal Investigator), Additivity of Isometric and Isokinetic Strengths of Females in Teamwork, University of Louisville Graduate Research Council Grant, \$2,500.00, 9/1, 1986 – 3/31, 1987.
5. Karwowski, W. (Principal Investigator) and Parsaei H. R., Human Perception of Industrial Robots: Safety Aspects, UofL Graduate Research Council Grant, \$3,280.00, May 15, 1987 - Dec 15, 1987.
6. Parsaei, H. R. and Karwowski, W., The Effectiveness of Different Robot Programming Techniques on Learning of Control Skills by Experienced and Inexperienced Operators, UofL Graduate Research Council Grant, \$3,900.00, 6/1/87 - 3/31/88.
7. Karwowski, W. (Principal Investigator), Worker Perception of Robotic Workstations, President's Research Initiative Grant, Supplement to NIOSH Grant for Support of Graduate Student, University of Louisville, \$7,702.00, June 1, 1988 - May 31, 1989.
8. Karwowski, W., President's Research Initiative Grant, Competitive Enhancement, University of Louisville, \$9,000.00, May 1993 - June 1994.
9. Karwowski, W., Special Research Incentive Fund, University of Louisville, \$2,388.00, December 1993.
10. Karwowski, W., Special Research Incentive Fund, University of Louisville, \$2,945.00, September 1994.

11. Karwowski, W., Special Research Incentive Fund, University of Louisville, \$1,040.00, November 1995.
12. Karwowski, W. (Principal Investigator), Angelopoulou, A. and Mykoniatis, K., UCF I-Corps: UTASiMo, \$2,604.00, 2015-2016.

### 3. PhD Dissertation Advising

*As chair of Ph.D. dissertation committees, Dr. Waldemar Karwowski ranks in the top 20 at UCF and the top 3 in CECS for number of Ph.D. graduates at University of Central Florida since Fall 2012. Dr. Karwowski has also served as a member of over 30 Ph.D. committees including interdisciplinary committees for Modeling and Simulation Program.*

#### 3a. Ph.D. Dissertations completed

1. Nai Pongpatanasuegsa, Ph.D. in Industrial Engineering, EMG Evaluation and Fuzzy Scaling of Load Acceptability in Manual Lifting Tasks, Department of Industrial Engineering, University of Louisville, August 1993.
2. Jari Jarvinen, Ph.D. in Industrial Engineering, Disturbance Control and Worker Safety in Computer-Integrated Manufacturing Systems, Department of Industrial Engineering, University of Louisville, December 1993. (Director, Human Factors, Motorola Solutions, Inc.).
3. Bill Jamaldin, Ph.D. in Industrial Engineering, Mathematical Modeling of Interactions for Evaluation of Complex Ergonomic Systems Department of Industrial Engineering, University of Louisville, May 1996.
4. Paul Gaddie, Ph.D. in Industrial Engineering, Psychophysical Lifting Limits: A Comparison of Concepts, Motion Characteristics, and Effects of Noise, Department of Industrial Engineering, University of Louisville, May 1998.
5. WookGee Lee, Ph.D. in Industrial Engineering, A Fuzzy Logic-Based Model for Predicting EMG Activity of Trunk Muscles, Department of Industrial Engineering, University of Louisville, December 1998.
6. Jussi Kantola, Ph.D. in Industrial Engineering, A Design System for Integration of People, Organization and Technology in Advanced Manufacturing, Department of Industrial Engineering, University of Louisville, December 1998. (Professor, Head of the Department of Production, University of Vaasa, Finland)
7. Bradley Chase, Ph.D. in Industrial Engineering, Effects of Thermal Environments on Divided Attention Abilities, Department of Industrial Engineering, University of Louisville, August 1999. (Associate Professor, Industrial and Systems Engineering, Shiley-Marcos School of Engineering, University of San Diego)
8. Renliu Jang, Ph.D. in Industrial Engineering, Assessment of Physical Strain in Nurses, Department of Industrial Engineering, University of Louisville, August 2001.
9. John Dzissah, Ph.D. in Industrial Engineering, Integration of Ergonomics, Safety and Quality Issues in Manufacturing Environments, Department of Industrial Engineering, University of Louisville, August 2001. (Professor, Department Chair, Operations and Management Department, University of Wisconsin Stout)
10. Veronica H. Smith, Ph.D. in Industrial Engineering, An Empirical Investigation of the Relationship Between Work-Related Musculoskeletal Disorders and Self-Reported Workers' Compensation Claims Outcomes, Department of Industrial Engineering, University of Louisville, August 2002.



11. David Rodrick, (*Health Scientist at AHRQ*) Ph.D. in Industrial Engineering, Nonlinear Dynamics Phenomena in Physical Ergonomics, Department of Industrial Engineering, August 2005.
12. John Layer, Ph.D. in Industrial Engineering, Human Performance In Agile Production Systems: A Longitudinal Study In System Outcomes, Human Cognition, and Quality Of Work Life, Department of Industrial Engineering, University of Louisville, December 2005. (Associate Professor of Mechanical Engineering at the University of Evansville)
13. Tanapun Karunanont, Ph.D. in Industrial Engineering. Management of Safety Culture and Learning in Manufacturing Organizations, Department of Industrial Engineering, University of Louisville, May 2007.
14. Tamer Khaled, Ph.D. in Industrial Engineering. A Nonlinear Time Series Analysis of Four Trunk Muscles' Surface EMG and of Trunk Kinematics during Manual Lifting, Department of Industrial Engineering, University of Louisville, December 2007.
15. Bohdana Sherehiy, Ph.D. in Industrial Engineering, Relationships between Agility Strategy, Work Organization and Workforce Agility. Department of Industrial Engineering, University of Louisville, May 2008. (Director of Human Factors Research, EurekaFacts LLC)
16. Monica F. Philippart, (*Owner, Ergonomic Human Factors Solutions*) Ph.D. in Industrial Engineering. Improving Organizational Performance Through the Integration of Human Factors Engineering into Business Processes Using a Systems Engineering Approach. Department of Industrial Engineering and Management Systems, University of Central Florida, December 2008.
17. Christopher Andrzejczak, Ph.D. in Industrial Engineering. Human Factors of Self-Reported Anomalies in Civil Aviation, Department of Industrial Engineering and Management Systems, University of Central Florida, December 2010.
18. Wilfred Wells, Ph.D. in Industrial Engineering, A SysML-based Tutorial for Cognitive Work Analysis and Training. Department of Industrial Engineering and Management Systems, University of Central Florida, December 2011. (Department Head, Biomedical Sciences, US Navy).
19. Andrew Richardson, Ph.D. in Industrial Engineering. Human-Robot Teaming Through Implicit Communication, Department of Industrial Engineering and Management Systems, University of Central Florida, August 2012.
20. Hong Jiang, Ph.D. in Industrial Engineering. A System Dynamics Model for Manpower and New Technology Implementation Trade-off and Cost Estimation, Department of Industrial Engineering and Management Systems, University of Central Florida, August 2013. (*Operation Research Cost Analyst, Modeling and Simulation Engineer Navair Warfare Center Training System Division*).
21. Halil Bozkurt, Ph.D. in Industrial Engineering. Modeling of Socio-Economic/Cultural Factors and Adverse Events in an Active War Theater Using Cellular Automata, Department of Industrial Engineering and Management Systems, University of Central Florida, August 2013.
22. Erman Cakit, Ph.D. in Industrial Engineering. Investigating the Relationship between Adverse Events and Infrastructure Development in an Active War Theater Using Soft Computing Techniques, Department of Industrial Engineering and Management Systems, University of Central Florida, August 2013. (*Assistant Professor of Industrial Engineering at Aksaray University, Turkey*)
23. Behzad Esmailian, Ph.D. in Industrial Engineering. Total Ownership Cost Modeling of Technology Adoption Using System Dynamics: Implications For ERP Systems, Department of Industrial Engineering and Management Systems, University of Central Florida, August 2013.

24. Anthony Costello, (*Senior Product Designer, Health Fidelity*) Ph.D. in Industrial Engineering. Design of Mixed Human-Computer Displays, Department of Industrial Engineering and Management Systems, University of Central Florida, August 2014.
25. Muyuan Li, Ph.D. in Industrial Engineering. A Short Window Granger Causality Approach to Identify Brain Functional Pattern Associated with Changes of Performance Induced by Sleep Deprivation, Department of Industrial Engineering and Management Systems, University of Central Florida, December 2014.  
(*Health System Engineer, Senior, BayCare Health System*).
26. Mohammed Alsowayigh, (*Boeing 777 First Officer, Saudi Airlines*) Ph.D. in Industrial Engineering, Assessing Safety Culture Among Pilots In Saudi Airlines: A Quantitative Study Approach. Department of Industrial Engineering and Management Systems, University of Central Florida, December 2014.
27. Yiling He, (*Quality Assurance Engineer/Human Factors Engineer*), Ph.D. in Industrial Engineering. The Effects of Chronic Sleep Deprivation on Sustained Attention: A Study of Brain Dynamic Functional Connectivity. (Co-Advisor: Petros Xanthopoulos). Department of Industrial Engineering and Management Systems, University of Central Florida, May 2015.  
*Quality Assurance Engineer/Human Factors Engineer*.
28. Barclay Brown, (*Global Solution Executive, IBM*) Ph.D. in Industrial Engineering. Modeling of Human Aspects of Complex Systems Integration, Department of Industrial Engineering and Management Systems, University of Central Florida, May 2015.
29. Muhanna Alnoaimi, (*Aircraft Maintenance Commander, Royal Bahraini Air Force*), Ph.D. in Industrial Engineering. Safety Climate and Safety Outcomes in Aircraft Maintenance: A Mediating Effect of Employee Turnover and Safety Motivation. Department of Industrial Engineering and Management Systems, University of Central Florida, August 2015.
30. Anastasia Angelopoulou, (*Postdoctoral Researcher, Institute for Simulation and Training*) Ph.D. in Modeling and Simulation, A Simulation-Based Task Analysis Using Agent-Based, Discrete Event And System Dynamics Simulation. Department of Industrial Engineering and Management Systems, University of Central Florida, December 2015.
31. Konstantinos Mykoniatis, Ph.D. in Modeling and Simulation, A Generic Framework For Multi-Method Modeling And Simulation Of Complex Systems Using Discrete Event, System Dynamics And Agent Based Approaches. Department of Industrial Engineering and Management Systems, University of Central Florida, December 2015.
32. Asli Soyler Akbas, Ph.D. in Modeling and Simulation, Agent Based and System Dynamics Hybrid Modeling and Simulation Approach Using Systems Modeling Language. Department of Industrial Engineering and Management Systems, University of Central Florida, December 2015.
33. Nelson Lerma, Ph.D. in Industrial Engineering, An Investigation Of Physiological Measures in a Marketing Decision Task. Department of Industrial Engineering and Management Systems, University of Central Florida, December 2015. (Mechanical Engineer, NAWC Training Systems Division, AIR 4.6.2.2 Weapons Training and Simulation Lab)
34. Mitchell Rabinowitz, Ph.D. in Industrial Engineering. Assessing The Effect of Social Networks on Lower Magnitude Creativity in an Environment Not Conducive to Creative Performance, Department of Industrial Engineering and Management Systems, University of Central Florida, August 2016.
35. Awad M. Aljuaid, Ph.D. in Industrial Engineering. Neuroergonomics Study: Analysis Of Brain EEG's Activity During Manual Lifting Tasks. Department of Industrial Engineering and Management Systems, University of Central Florida, May 2016 (Co-Advisor).

36. Omar A. Alrehaili, Ph.D. in Industrial Engineering. Safety Culture in Construction Industry, Department of Industrial Engineering and Management Systems, University of Central Florida, December 2016.
37. Afrifah Y. Bobbie, Ph.D. in Industrial Engineering. Investigating Scheduling Policies To Reduce Failed Medical Appointments: A Simulation Approach. Department of Industrial Engineering and Management Systems, University of Central Florida, December 2016.
38. M. Beth H. Pettitt, Ph.D. in Modeling and Simulation. Usability Assessment of Simulated Wounds, Department of Industrial Engineering and Management Systems, University of Central Florida, December 2017.

### **3b. Ph.D. Dissertations in-progress**

39. Kevin Muhs, Ph.D. in Industrial Engineering. Modeling And Simulation Of Human Variability, Department of Industrial Engineering and Management Systems, University of Central Florida, May 2018.
40. Ashraf Alhujaili, Ph.D. in Industrial Engineering. Cyberbullying Detection using Brain Computer Interface (BCI). Department of Industrial Engineering and Management Systems, University of Central Florida, expected to graduate in May 2018.
41. Thomas Bergmann, Ph.D. in Industrial Engineering. Project Management Agility. Department of Industrial Engineering and Management Systems, University of Central Florida, expected to graduate in August 2018.
42. Henriette Shoen, Ph.D. in Industrial Engineering. Modeling and Simulation of Innovation Index. Department of Industrial Engineering and Management Systems, University of Central Florida, expected to graduate in August 2018.
43. Xu, Ziping, Ph.D. in Industrial Engineering, University. Chaotic Behavior of EMG Signals under Different Levels of Cognitive Workload. Department of Industrial Engineering and Management Systems, University of Central Florida, expected to graduate August 2018.
44. Joseph Garmon, Ph.D. in Industrial Engineering. Cybersecurity of Electric Power Grids. Department of Industrial Engineering and Management Systems, University of Central Florida, expected to graduate in August 2018.
45. Denton Gibson, Ph.D. in Industrial Engineering. A Method for Evaluation Systems Engineering Practices of an Aerospace Organization, Department of Industrial Engineering and Management Systems, University of Central Florida, expected to graduate in May 2019.
46. Raul Fernandez-Sumano, Ph.D. in Industrial Engineering, Neural Correlates of Physical Exertions, Department of Industrial Engineering and Management Systems, University of Central Florida, expected to graduate in May 2019.
47. Glaspie, H. Ph.D. in Industrial Engineering. Human Factors in Information Security Culture. Department of Industrial Engineering and Management Systems, University of Central Florida, expected to graduate in May 2019.
48. Mahjabeen Rahman, Ph.D. in Industrial Engineering, TBD, Department of Industrial Engineering and Management Systems, University of Central Florida, expected to graduate in May 2020.
49. Farzad Vasheghani-Farahani, Ph.D. in Industrial Engineering, TBD, Department of Industrial Engineering and Management Systems, University of Central Florida, expected to graduate in May 2020.
50. Nina Ismail, Ph.D. in Industrial Engineering, TBD, Department of Industrial Engineering and Management Systems, University of Central Florida, expected to graduate in May 2020.

51. Sarah Matthews, Ph.D. in Industrial Engineering, TBD, Department of Industrial Engineering and Management Systems, University of Central Florida, expected to graduate in May 2020.

### **3c. M.Eng / M.S.Thesis completed**

1. Nancy Mulholland, Master of Engineering in Industrial Engineering, Development of the Rule-Based System for Evaluation and Design of Manual Materials Handling Tasks, Department of Industrial Engineering, May, 1985.
2. Nai Pongpatanasuegsa, Master of Engineering in Industrial Engineering, Additivity of Isometric and Isokinetic Lifting Strength of Females in Teamwork, Department of Industrial Engineering, May 1986.
3. L. E. Palenque, Master of Engineering in Industrial Engineering, M-LIFTAN: A Microcomputer-based Expert System for Manual Materials Handling, Department of Industrial Engineering, August 1986.
4. S. E. Wisman, Master of Engineering in Industrial Engineering, An Ergonomic Analysis of Manual Mail Bag Handling: A Case Study, Department of Industrial Engineering, May 1987.
5. J. Primovic, Master of Engineering in EM, Effect of Automation on Safety Performance: Case Study Department of Industrial Engineering, August 1987.
6. T. S. Plank, Master of Engineering in Industrial Engineering, An Investigation of the Human Perception of a Robot's Motions, Department of Industrial Engineering, December 1987.
7. R. Geier, Master of Engineering in Engineering Management, Subjective Evaluation of Risk in Industrial Safety Engineering, Department of Industrial Engineering, May 1988.
8. A. Burkhardt, Master of Engineering in Industrial Engineering, Imprecision of Human Judgment in the Psychophysical Assessment of the Maximum Acceptable Weight of Lift Department of Industrial Engineering, May 1988.
9. D. L. Nash, Master of Engineering in Industrial Engineering, Human-Robot Interaction: Perception of the Robots Working Envelope, Department of Industrial Engineering, May 1988.
10. S. L. Campbell, Master of Engineering in Industrial Engineering, Robot Safety: Perception of Robot's Idle Condition as an Indicator of the Inactivity Time, Department of Industrial Engineering, May 1988.
11. B. Amarnath, Master of Science in Industrial Engineering, Workers' Perception of Operational Characteristics of an Industrial Robot, Department of Industrial Engineering, December 1989.
12. C. Shumate, Master of Engineering in Industrial Engineering, Discriminability of Load Heaviness, Department of Industrial Engineering, May 1990.
13. W. D. Moxley, Master of Engineering in Industrial Engineering, Effect of Space, Instructions, and Color on the Maximum Acceptable Weight of Lift, Department of Industrial Engineering, August 1990.
14. H. Alsabi, Master of Engineering in Industrial Engineering, The Effect of Space Confinement on Manual Lifting Tasks with Angular Displacement of Load in Non-Sagittal Plane, Department of Industrial Engineering, August 1991.
15. A. Soundararajan, Master of Science, Human Perception of Danger and Safe Distance at Slow Speed of Robot Motion, Department of Industrial Engineering, December 1991.

16. V. A. Bryant, Master of Engineering in Industrial Engineering, An Ergonomic Evaluation of Passenger Automobile Trunk Design, Department of Industrial Engineering, May 1992.
17. N. E. Perronie, Master of Engineering in Industrial Engineering, Ergonomic Analysis of Ladder Manufacturing, Department of Industrial Engineering, May 1992.
18. Nina Brokaw, Master of Engineering in Industrial Engineering, Evaluation of the Revised NIOSH Lifting Guide, Department of Industrial Engineering, December 1992.
19. M. Caldwell, Master of Science in Industrial Engineering, Control of Low Back Injury at Liqui-Dri, Inc., Department of Industrial Engineering, December 1993.
20. Gary Grieshaber, Master of Engineering in Industrial Engineering, Distant Diagnosis of Occupational Injury, Department of Industrial Engineering, August 1994
21. Khalid Alqesami, Master of Engineering in Industrial Engineering, An Examination of the Psychophysical Approach to Setting Limits in Manual Lifting Tasks, Department of Industrial Engineering, August 1995
22. Jarko Salo, Master of Engineering at Tampere University of Technology (TTU), A Fuzzy Logic-Based System for Simulating the Integration of Advanced Manufacturing Technology, Organizational Design and Human Resources, Department of Mechanical Engineering, Tampere, Finland, August 1995.
23. Kristi Owen, Master of Science in Industrial Engineering, An Examination of the Psychophysical Approach to Setting Limits in Manual Lifting Tasks for Females, December 1995.
24. Bradley Chase, Master of Science in Industrial Engineering, Dual Task Performance under Thermal Stress, Department of Industrial Engineering, December 1997.
25. Carlos Lancaster, Master of Science in Industrial Engineering, Prevention of Accidents to Children at Home Through Design Solutions, Department of Industrial Engineering, August 1998
26. Orhan Korhan, Master of Science in Industrial Engineering, Relationship Between the Emotions Associated with the Email Use and the Perceived Musculoskeletal Stress, Department of Industrial Engineering, May 2002.
27. Kim D. Carter, Master of Science Project in Industrial Engineering, Quantifying Effectiveness of Dynamic Message Signs, Department of Industrial Engineering, December 2002.
28. Tamer Khalaf, Master of Science in Industrial Engineering, Ergonomic Evaluation of Computer Keyboards, Department of Industrial Engineering, May 2004.
29. Desiree Aixut, Master of Science in Industrial Engineering, Creative Tension: Management of Personnel Competences, Escola Tecnica Superior d'Enginyeria Industrial, Universitat Politecnica De Catalunya, Barcelona, Spain, May 2005.
30. Carles Monso Varona, Master of Science in Industrial Engineering, Learning Organizations and Creative Tension: Management of Personnel Competences- Part I, Escola Tecnica Superior d'Enginyeria Industrial Universitat Politecnica De Catalunya, Barcelona, Spain, May 2006.
31. Carlos Solduga Ramirez, Master of Science in Industrial Engineering, Learning Organizations and Creative Tension: Management of Personnel Competences- Part II, Escola Tecnica Superior d'Enginyeria Industrial, Universitat Politecnica De Catalunya, Barcelona, Spain, May 2006.
32. Benjamin Sawyer, Master of Science in Industrial Engineering, Applied Error Related Negativity: Single Electrode Electroencephalography in Complex Visual Stimuli, University of Central Florida, August 2014.

## V. SERVICE ACTIVITY

*Demonstrating national and international prominence in the field of industrial and system engineering, Dr. Karwowski has provided over 40 letters of promotion to professor at not only universities in the U.S. but internationally in the last five years.*

### 1. College and University

- Member of the UCF Faculty Senate Personnel Committee (2015 -2018)
- Member of the UCF Faculty Senate (2015 -present)
- Member of the UCF Undergraduate Policy and Curriculum Committee (2013-2015)
- Member, CECS Provost Distinguished Professorship Search Committee (2014-2015)
- Core Member, Faculty Cluster Initiative (FCI), Cyber Security and Privacy Cluster, 2014 - present
- Core Member, Faculty Cluster Initiative (FCI), UCF - A Prominent World Leader in Implantable Devices for Prosthetic Interfaces, 2014 - present
- Chair of the Fellows Selection Committee for the Human Factors and Ergonomics Society (HFES) 2012
- Chair of the CECS Selection Committee for CECS Dean's Research Professorship Awards (UCF) 2013
- Chair of the Fellows Selection Committee for the Institute of Industrial Engineers (IIE) 2013
- Member of the ISERC Annual Conference Oversight Committee of the Council of Industrial Engineering Academic Department Heads (CIEDH), 2012-2015
- Past-President and Member of the Institute of Industrial Engineers (IIE) Council of Fellows, 2012-present
- Representative of Academy of Industrial Management (AIM) to IIE for international collaboration. 2014-present
- Member, UofL Graduate School Council (2001-2004)
- Member, UofL Provost's Committee on Graduate/Professional Student Admission and Performance (2002 –2007)
- Chair and UofL University-wide Representative for the President's Award for Scholarship,
- UofL Research and Creative Activity (1992-1994)
- Member, UofL Provost's Advisory Committee for the International Center (1994-2007)
- Member, UofL Learning and Instruction Committee (1983-1985)
- Member, UofL Artificial Intelligence Research Program (1985-2007)
- UofL Graduate School: Member, Graduate Programs Review Committee for Exercise Physiology Laboratory (1984-1985)
- Chair and UofL University-wide Representative for the President's Committee on Awards for Scholarship, Research and Creative Activity (1992-1994)
- Member, UofL Speed School Promotion and Tenure Committee (1987-1990)
- Member, UofL Kersey Library Users Group (1984-1986)
- Vice-Chairman, UofL Kersey Library Users Group (1986-1988)
- Chairman, UofL Speed Scientific School Library Committee (1988-1989)
- Chairman of the UofL Dean's Screening Committee for the President's Award for Scholarship, Research and Creative Activity (1992-1994)
- UofL Interdisciplinary Faculty Position in Manufacturing Engineering, Member (1994-1995)
- Member, UofL Speed School Promotion and Tenure Committee (1986-1999)
- Chair, UofL Promotion and Tenure Committee, Industrial Engineering Department (1986-1999)

- Member, UofL Search Committee for the Assistant Professor faculty position (1984-1986)
- Member, UofL Search Committee for the Departmental Technician (1986)
- Chair, UofL IE Departmental Space Needs Analysis and Allocation Committee (1986-1987)
- Member, UofL Search Committee for the Edward Reep Clark Chair of Computer-Aided Engineering (1986-1988).
- Member, UofL IE Department / Ph.D. Admissions Committee (1987-1994)
- Member, UofL IE Department / Library Committee (1989-present)
- Departmental UofL Faculty Search Committee, Member (1994-1995)
- Chair, UofL IE Department / Ph.D. Admissions Committee (1995 - present).

## **2. Scientific Reviewer**

### **2.1. Reviewer of research proposals for:**

- National Science Foundation (USA)
  - NSF Panel Review Evaluator for PFI: BIC Smart Manufacturing & Logistics, Program. April 21- 23, 2016, NSF, Washington, DC.
  - NSF Panel Review Evaluator for PFI: BIC Smart Manufacturing & Logistics, 3D Printing P151395: March 24- 25, 2015, NSF, Washington DC.
- National Institute for Occupational Safety and Health Study Section, NIOSH (DHHS)
- The Research Council of Hong Kong
- The Ontario Workplace Safety and Insurance Board (WSIB),  
Canada National Science Foundation (USA)
- National Sciences and Engineering Research Council of Canada
- The Research Council of Hong Kong
- VII Framework Program European Union, Brussels, Belgium
- Agency for Healthcare Research and Quality (AHRQ), DHHS.

### **2.2. Reviewer for archival peer-review journals (2016):**

- Ergonomics
- Human Factors
- Work, International Journal
- Applied Ergonomics
- International Journal of Industrial Ergonomics
- International Journal of Occupational Safety and Ergonomics
- Occupational Ergonomics
- IISE Transactions
- Universal Access to the Information Society: International Journal
- IEEE Transactions on Fuzzy Sets and Systems
- IEEE Transactions on Man, Systems, Cybernetics
- IEEE Transactions on Human-Machine Systems

- Fuzzy Sets and Systems: International Journal
- Journal of Intelligent & Fuzzy Systems
- International Journal of Production Research
- International Journal of Human-Computer Interaction
- International Journal of Computers and Industrial Engineering
- Computers in Human Behaviour
- Frontiers in Human Neuroscience
  - Frontiers in Psychology

### 3. Other professional activities

- Conference Co-Chair, Member Plenary Session: Science Technology, Higher Education and Society in the Conceptual Age (STHESCA), AHFE 2014.
- Conference Co-Chair, Chair Plenary Session: Beyond Technological Borders, International Conference on "Science, Technology, Higher Education, and Society in the Conceptual Age" (STHESCA), Krakow, Poland, 2011.
- Chair, CIEDAH Oversight Committee for Technical Program, 2012 IIE Annual Meeting, Orlando, FL.
- Newsletter Editor, Industrial Ergonomics Technical Group, Human Factors and Ergonomics Society, 1994-1995.
- Chair, Industrial Ergonomics Subcommittee of The Science and Technology Committee, International Ergonomics Association, 1988-1994.
- Invited Chair of the Cluster on Ergonomics in Manufacturing, Joint ORSA/TIMS Fall Conference: Global Manufacturing in 21st Century, Detroit, October 23-26, 1994.
- Founding Member and Treasurer, International Foundation for Industrial Ergonomics and Safety Research, 1986 -1989.
- Conference Chairman, Second International Conference on Ergonomics of Advanced Manufacturing and Hybrid Automated Systems, Honolulu, Hawaii, August 12-14, 1990.  
Chairman, Ergonomics Committee, American Industrial Hygiene Association, 1988-1989.
- Founder and Conference Chairman, International Conference on Ergonomics of Advanced Manufacturing and Hybrid Automated Systems, Louisville, KY, August 16-18, 1988.
- Conference Chairman, Annual International Industrial Ergonomics and Safety Conference 1986, Louisville, KY, June 12-14, 1986.
- Program-Chair of the Industrial Ergonomics Technical Group, Human Factors Society, 1987-1989.
- Chairman of the Industrial Ergonomics Technical Group to the Council of Technical Groups, Human Factors Society, 1987-1989.
- Representative of the Industrial Ergonomics Technical Group to the Council of Technical Groups, Human Factors Society, 1987-1989.