THOMAS J. ALBIN, PE, CPE
High Plains Engineering Services, LLC
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EDUCATION

Technical University of Delft	2014	PhD Industrial Design Engineering
University of Nebraska, Lincoln	1986	MS Industrial Engineering
University of Nebraska, Lincoln	1975	MA Educational Psychology
University of Nebraska, Lincoln	1973	BA Psychology

PROFESSIONAL SOCIETIES, CERTIFICATIONS AND LICENSES

- Licensed Professional Engineer, Minnesota license # 0211488
- Certified Professional Ergonomist, Certificate # 320
- Member, Human Factors and Ergonomics Society
- Member, Sigma Xi Scientific Research Society
- Private Pilot's License

PROFESSIONAL EXPERIENCE

2012 – Present — Guest editor of the journal WORK for a special issue titled "Computer Ergonomics: State of the Art"

2012 – Present — Editorial board for the journal WORK

2007 – Present — Principal, High Plains Engineering Services, LLC

Responsibilities: Act as expert ergonomics consultant to clients. Services typically include participation in the development and maintenance of national and international technical standards, product design and technical marketing activities.

Accredited as US technical expert to International Standards Organization (ISO) committees developing technical standards for electronic displays, computer input devices, and accessible hardware and software.

Co-chair of the American National Standards Institute (ANSI) committee responsible for developing and revising the American National Standard for Human Factors Engineering of Computer Workstations (ANSI/HFES 100).

Represent clients in standards developing committees. Review technical literature and conduct research for clients to evaluate product concepts and designs.

2007 – Present Executive Director, Office Ergonomics Research Committee

Responsibilities: Manage operations of a research consortium formed by companies and organizations active in the ergonomics marketplace. OERC funds cutting-edge research in the field of computer ergonomics and promotes knowledge of computer ergonomics technology.

2001 – 2007 Master Consulting Ergonomist/ Director of Technology - Auburn Engineers, Inc.

Responsibilities: Acted as expert consultant to clients. Accredited as US technical expert to International Standards Organization (ISO) committees developing technical standards for electronic displays, computer input devices, and accessible hardware and software. Chaired an American National Standards Institute (ANSI) committee that developed a new American National Standard for computer workstations. Represent clients in standards developing committees. Review technical literature and conduct research for clients to evaluate product concepts and designs. Act as lead for clients to obtain product endorsements from professional societies and act as liaison with product certifying agencies.

Act as client spokesperson, develop and participate in client communication efforts and other marketing activities. Act as expert witness.

Provide technical training to clients and conduct audits of products and processes. Analyze risks associated with products and processes, identify root causes of problems and develop solutions for clients.

1989 – 2001 3M - Ergonomist; Ergonomics Specialist, Manager Ergonomics Services

Responsibilities: Acted as internal consultant in ergonomics, promoted to ergonomics services manager in line division. Worked with new product development and design group in line division to identify market opportunities and develop products, evaluated existing literature and conducted research to evaluate in-house product designs and concepts as well as competitive products. Acted as corporate spokesperson for human factors and ergonomics. Represented company to the global ergonomics community of practitioners, standards developers and researchers. Developed conferences and seminars to present technical material and product information to customer subject-matter experts.

Led development and implementation of an ergonomics program that played key role in reduction in the incidence and severity of injuries and illnesses throughout the corporation, published results. Worked with corporate medical group in management of return to work cases.

1997 – 1998	Adjunct Faculty, University of St. Thomas, St. Paul, MN Responsibilities: Developed and taught graduate course in ergonomics in the Engineering College.
1989	Ergonomics Consultant, Ergotech, Inc. Responsibilities: acted as expert consultant in ergonomics.
1986-1989	Principle Investigator, United States Bureau of Mines Responsibilities: managed research projects regarding safety of mining employees operating trucks and other mobile equipment. Directed two research projects and two other engineers.
1983 – 1986	Graduate Fellow, Graduate Assistant – University of Nebraska Responsibilities: taught courses, conducted research in Industrial Engineering Department

SERVICE

- Chair of the committee responsible for developing and maintaining *ANSI/HFES 100-2007 Human Factors Engineering Standard for Computer Workstations*
- Vice Chair, SC4, US Technical Advisory Group to ISO TC 159
- US Technical Expert to International Standards Organization standard development committees covering the ergonomics of electronic displays (ISO TC 159/SC4/WG2), computer input devices and working environment (ISO TC 159/SC4/WG3)
- Past Member and Head of Delegation, US Study Group of ISO JTC1/SWGA - accessibility of Information and Communications Technology for aged and disabled populations
- Committee Member, Human Factors and Ergonomics Society Technical Institute
- Member, Expert Advisory Panel for State of California during development of ergonomics standard
- Officer, Upper Midwest Chapter, Human Factors and Ergonomics Society (program chair, president, director)

SIGNIFICANT ACHIEVEMENTS

- Led the completion and publication of the ANSI/HFES 100-2007 Human Factors Engineering of Computer Workstations Standard
- Effectively represented clients in the development of International Technical Standards related to electronic displays and input devices
- Conducted multiple studies of clients' products to assess design concepts with regard to conformance with standards, usability and user-risk profiles
- Initiated, led and completed the processes required to obtain product endorsements from professional societies
- Established liaisons with product certifying bodies for clients
- Wrote ergonomic guidelines for the Occupational Safety and Health Administration (OSHA)
- Interpreted regulatory requirements for customers and developed plan to establish conformance
- Acted as corporate spokesperson on ergonomics – numerous interviews in print and electronic media

- Received 3M Chairman's Leadership Award - Environment, Health and Safety (EHS)
- Developed and marketed a training program to prepare customers' health and safety professionals to implement office ergonomics programs
- Created and implemented a strategy for participation in the development of ergonomics standards at state and national level
- Created, planned and implemented a series of technical conferences for office ergonomics professionals
- Wrote software programs to identify ergonomic cases in health and safety records and established management metrics
- Invited Participant to National Academy of Sciences Workshop on Work-Related Musculoskeletal Injuries
- Keynote speaker at OSHA conference on best practices in ergonomics
- Invited speaker at international conferences on ergonomics and corporate ergonomics programs
- Published research articles in technical journals
- Reviewer for *Applied Ergonomics, Ergonomics in Design, Journal of Occupational and Environmental Medicine, Current Psychology* and *WORK*
- Program Chair for the Industrial Ergonomics Technical group of HFES
- Review articles submitted to Human Factors and Ergonomics Society annual conference
- Conceptualized, developed, trained and led a corporate cross-functional team of engineers, ergonomists and nurses to implement a broad-based ergonomics effort.
- Created a course in basic ergonomics for engineers
- Requested to co-lead development of an engineering health and safety review process to be applied to all new production equipment
- Wrote a corporate ergonomics program manual to assist facilities in implementing ergonomics programs
- Created, developed and implemented a highly successful corporate office ergonomics program
- Co-led establishment of and provided technical oversight for an office ergonomics clinic in corporate medical department
- Wrote an Alpha grant to fund and co-authored an internet-based self-help site to educate office workers in basic office ergonomics and guide them through evaluation of their own computer workstations.
- Chaired Minnesota Chamber of Commerce technical group addressing VDTs
- Conducted research in methodologies of monitoring employees to detect early signs of carpal tunnel syndrome.
- Wrote digital image analysis program to analyze workplace biomechanics, wrote programs to process digital images and to compute two and three-dimensional biomechanical models of lifting.
- Supervised development of a prototype maintenance-management information system that incorporated on-line equipment manuals.

SELECTED PUBLICATIONS AND PRESENTATIONS

Journal Articles

Albin, T. J., & Adams, W. P. (1990). *Slip-and-fall accidents during equipment maintenance in the surface mining industry*. US Department of the Interior, Bureau of Mines.

Albin, T.J, Hebaus, M, Ley, C.E (1997) Office ergonomics clinic results at thirty months (Letter to the Editor) *Journal of Occupational and Environmental Medicine*, vol. 39, 11, p. 1031.

Albin, T. J. (2012). Measuring the validity and reliability of ergonomic checklists. *Work: A Journal of Prevention, Assessment and Rehabilitation*, *43*(3), 381-385.

Albin, T. J. (2013). A method to improve the accuracy of pair-wise combinations of anthropometric elements when only limited data are available. *Work: A Journal ofPrevention, Assessment and Rehabilitation*.

Albin, T.J. and McLoone, H. E. (2013) The effect of tablet tilt angle on users' preferences, postures and performance. *Work: A Journal of Prevention, Assessment and Rehabilitation*.

Albin, T.J. and Vink, P. (2014) A method superior to adding percentiles when only limited anthropometric data such as percentile tables are available for design models. *Applied Ergonomics*.

Albin, T.J. and Vink, P. (2014) An empirical description of the dispersion of 5th and 95th percentiles in worldwide anthropometric data applied to estimating accommodation with unknown correlation values. *Work: A Journal of Prevention, Assessment and Rehabilitation*.

Technical Standards Edited

Human Factors and Ergonomics Society (2007) *ANSI/HFES 100 – 2007 Human Factors Enngineering of Computer Workstations*, Human Factors and Ergonomics Society, Santa Monica.

ISO. (2012). *ts 9241-411, ergonomics of human-system interaction-part 411: Evaluation methods for the design of physical input devices*. Technical report, International Organization for Standardization, Geneva, Switzerland.

ISO. (2014*) Unwanted reflections from the active and inactive areas of display surfaces visible during use: A review for TC159 SC4/WG2*, Technical report, International Organization for Standardization, Geneva, Switzerland. Approved for publication December, 2014

Book Chapters

Alexander, D.C, Albin, T.J. (1999) Economic justification of the ergonomic process, In (Karwowski, W, Marras, W.S. (Eds) *The Occupational Ergonomics Handbook*, CRC Press, Boca Raton, pp: 1495-1505.

Albin, T.J. (1999) Maturation and devolvement of the ergonomics process within a large, multinational corporation In Wikstrom, B-O, Hägg, G. (Eds.) *International Seminar on Corporate Initiatives in Ergonomics 1999:10*, Stockholm, 19-20 March, 1999. Arbetslivinstitutet

Albin, T. J. (2006). Human Factors Engineering of Computer Workstations: HFES Draft Standard for Trial Use. *Handbook On Standards And Guidelines in Ergonomics And Human Factors*, 361.

Larson, N., Wick, H., Albin, T.J., Vink, P. (2014) in Vink, P. (Ed.) *Occupational Ergonomics*, CRC Press, Boca Raton

Conference Presentations

Cochran, D. J., Albin, T. J., Bishu, R. R., & Riley, M. W. (1986, September). An analysis of grasp force degradation with commercially available gloves. In *Proceedings of the Human Factors and Ergonomics Society Annual Meeting* (Vol. 30, No. 8, pp. 852-855). SAGE Publications.

Albin, T. J. (1987, September). In vivo estimation of the coefficient of friction between extrinsic flexor tendons and surrounding structures in the carpal tunnel. In *Proceedings of the Human Factors and Ergonomics Society Annual Meeting* (Vol. 31, No. 3, pp. 323-324). SAGE Publications.

Albin, T. J. (1988, October). Relative contribution of behavior to slip and fall accidents in mining maintenance. In *Proceedings of the Human Factors and Ergonomics Society Annual Meeting* (Vol. 32, No. 8, pp. 511-514). SAGE Publications.

Albin, T.J. and Adams, W.P. (1989) Slip and fall accidents during equipment maintenance in the surface mining industry. In Mital, A (Ed) Advances in Industrial Ergonomics and Safety I, pp 585-591, Taylor and Francis, New York

Albin, T. (1997). Effect of wrist rest use and keyboard tilt on wrist angle while keying. In *13th Triennial Conference of the International Ergonomics Association* (Vol. 1).

Albin, T. (1999) Maturation and devolvement of the ergonomic process within a large, multinational corporation. In Wikstrom, B-O, Hagg, G. (eds) International Seminar on Corporate Initiatives in Ergonomics, Arbete och Halsa 1999: 10, NIWL, Stockholm

Openshaw, S, Albin, T. (2008) Assessment of the effect of a pivoting backrest and activity level on spinal shrinkage. *Proceedings of the Human Factors and Ergonomics Society Annual Meeting* (Vol. 52, 17: pp. 1145-1149). SAGE Publications.

Albin, T. J. (2013, September). Combining Very Limited Anthropometric Data A Simple Method With Less Error Than Adding or Subtracting Percentiles. In *Proceedings of the Human Factors and Ergonomics Society Annual Meeting* (Vol. 57, No. 1, pp. 943-947). SAGE Publications.

Albin, T. J. (2013, September). Evaluating the Efficiency of Checklists Used to Assess Risk of Musculoskeletal Disorders. In *Proceedings of the Human Factors and Ergonomics Society Annual Meeting* (Vol. 57, No. 1, pp. 985-988). SAGE Publications.