## *Thomas E. Bernard*

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## *Professor, College of Public Health*

Professor since 8/1995; Associate Professor from 4/1989 to 8/1995
Chair, Department of Environmental and Occupational Health (11/2003 to 8/2017)

## *Education*

Ph.D. in Occupational Health, University of Pittsburgh, Pittsburgh, PA (1975)
M.S. / B.S. in Mechanical Engineering, Carnegie Mellon University, Pittsburgh, PA (1972 / 70)

## *Major Professional Activities*

*Heat Stress*. Recently, exploration of risk associated with heat stress exposures, occupational exposure limits, and physiological metrics to assess degree of exposure. Long history of investigations on the effects of protective clothing on the level of heat stress; and on the benefits of personal cooling systems. Applications of alternative methods of heat stress evaluation in work environments based on heat balance analysis techniques and on assessment of physiological strain. Implementation of integrated programs of heat stress management.

*Ergonomics*. Development, validation and refinement of ergonomics surveillance tool for MSDs. Implementation of job analysis tools to better match the needs of the users from personnel on the floor to engineers designing new jobs. Articulation of methods to predict the metabolic demands of work.

*Instruction and Advising*. Graduate-level courses in industrial ergonomics, physical agents and controls in industrial hygiene, and occupational health and safety management systems. Supervise student research. Routinely instruct in professional development courses.

## *Recognition*

ACGIH® William D. Wagner Award 2022
Fellow of American Industrial Hygiene Association (FAIHA)
Fulbright Scholar at Loughborough University, UK (Fall 2011)
W. W. Clyde Chair, College of Engineering, University of Utah (Fall 2002)
Certified in Public Health (CPH) (5567, 8/2010)
Certified Safety Professional (CSP) (20170, 5/2008)
Certified Industrial Hygienist (CIH) (6346, 7/1994)
Certified Professional Ergonomist (CPE) (088, 6/1993)
Registered Professional Engineer (Pennsylvania PE-029166-E, 3/1980)
Member, ACGIH®
ACGIH® Physical Agents Committee (Consultant 1/2020 to present, Member 5/1999 – 12/2019, Vice Chair 2003-05, Chair 2006-08)
Board of Directors, *Journal of Occupational and Environmental Hygiene* (2009 – 2010)
NIOSH Peer Review Panels (SOH and SBIR: 2000 – 2006; SOH and SEP: ad hoc to present)
USF Health Leadership Institute (2008)
USF President's Award for Faculty Excellence (2003)
USF College of Public Health Outstanding Teacher Award (1993, 1996, 2003)
Westinghouse Signature Award of Excellence (1985 and 1987)
3 patents and 1 patent disclosure

## *Previous Employment*

Westinghouse Electric Corporation, Research and Development Center (1978 - 1989)
United States Bureau of Mines, Pittsburgh Research Center (1976 - 1978)
Pennsylvania State University (1974-1975)
University of Pittsburgh (1971-1974)

## *Publications (past 10 years)*

Bernard T. E., Manjunath G., and Wesdock J. C. Relating ambient heat to site clinic visits for heat-related symptoms among four middle eastern aluminium smelters. Journal of Occupational and Environmental Medicine. doi: 10.1097/JOM.0000000000003358. PMID: 40063771, 2025.

Bernard, T. E., Williams, K. E. and Ashley, C. D. Estimating metabolic rate from ISO heart rate method and two walking equations. Industrial Health 62:287-294, 2024.

Bernard, T. E., Wolf, S. T., and Kenney, W. L. A novel conceptual model for human heat tolerance. *Exercise and Sport Sciences Review* 52:39-46, 2024.

Bernard T. E., C. D. Ashley, S. T. Wolf, A. M. Odera, R. M. Lopez, and W. L. Kenney. Distribution of upper limit of the prescriptive zone values for acclimatized and unacclimatized individuals. *Journal of Applied Physiology* 135(3):601-608, 2023.

Bernard, T. E., Ashley, C. D., Wolf, S. T., & Kenney, W. L. Core temperature and heart rate at the upper limit of the prescriptive zone. *Physiological Reports*, 17, e15812, 2023. https://doi.org/10.14814/phy2.15812

Bernard T. E., J. W. Flach and C. D. Ashley. Group outcomes for time-weighted averaging in WBGT-based heat stress exposure assessment. *Annals of Work Exposures and Health* 67(3):345–353, 2023

Bernard T. E., C. D. Ashley, and D. Kapanowski. Ability of Thermal Work Limit (TWL) to assess sustainable heat stress exposures. *Annals of Work Exposures and Health* 66(8):1081-1085, 2022

Wolfe, S. T., T. E. Bernard, and W. L. Kenney. Heat exposure limits for young unacclimatized men and women at low and high humidity. *Journal of Occupational and Environmental Hygiene* 19(7):415-424, 2022.

Ioannou LG, Mantzios K, Tsoutsoubi L, Notley SR, Dinas PC, Brearley M, Epstein Y, Havenith G, Sawka MN, Bröde P, Mekjavic IB, Kenny GP, Bernard TE, Nybo L, Flouris AD. Indicators to assess physiological heat strain - Part 1: Systematic review. Temperature (Austin). 2022 Jul 31;9(3):227-262. doi: 10.1080/23328940.2022.2037376. PMID: 36211945; PMCID: PMC9542768.

Ioannou LG, Dinas PC, Notley SR, Gofa F, Gourzoulidis GA, Brearley M, Epstein Y, Havenith G, Sawka MN, Bröde P, Mekjavic IB, Kenny GP, Bernard TE, Nybo L, Flouris AD. Indicators to assess physiological heat strain - Part 2: Delphi exercise. Temperature (Austin). 2022 Mar 27;9(3):263-273. doi: 10.1080/23328940.2022.2044738. PMID: 36211947; PMCID: PMC9542877.

Ashley, C. D., R Lopez, X. Garzón-Villalba, and T. E. Bernard. Thermal exposure limit for mine refuge alternatives: A descriptive study. *Mining, Metallurgy & Exploration*, 37:179-186, 2020.

Garzón-Villalba, X. P., C. D. Ashley and T. E. Bernard. Benchmarking Heat Index as an occupational exposure limit for heat stress. *Journal of Occupational and Environmental Hygiene* 16(8):557-563, 2019.

Bernard T. E., D. S. Yantek and E. D. Thimons. Estimation of metabolic heat input for refuge alternative thermal testing and simulation. *Mining Engineering*, 70(8): 50-54, 2018.

Garzón-Villalba, X. P., Y. Wu, C. D. Ashley and T. E. Bernard. Heat stress risk profiles for three non-woven coveralls. *Journal of Occupational and Environmental Hygiene* 15(1): 80-85, 2018.

Bernard T. E., C. D. Ashley, X. P. Garzón, J.-H. Kim, A. Coca. Prediction of WBGT-based clothing adjustment values from evaporative resistance. *Industrial Health* 55(6):549-554, 2017.

Garzón-Villalba, X. P., Y. Wu, C. D. Ashley and T. E. Bernard. Ability to discriminate between sustainable and unsustainable heat stress exposures. Part 1: WBGT exposure limits. *Annals of Work Exposures and Health* 61(6):611-620, 2017.

Garzón-Villalba, X. P., Y. Wu, C. D. Ashley and T. E. Bernard. Ability to discriminate between sustainable and unsustainable heat stress exposures. Part 2: Physiological indicators. *Annals of Work Exposures and Health* 61(6):621-632, 2017.

Chang C. H., T. E. Bernard, and J. Logan. Effects of heat stress on risk perceptions and risk taking. *Applied Ergonomics* 62:150-157, 2017.

Garzon-Villalba, X. P., A. Mbah, S. W. Schwartz, Y. Wu, M. Hiles, H. Moore and T. E. Bernard. Exertional heat illness and acute injury related to ambient wet bulb globe temperature. *American Journal of Industrial Medicine* 59:1169-1176, 2016.

Ashley, C. D., J. Ferron, T. E. Bernard. Loss of heat acclimation and time to re-establish acclimation. *Journal of Occupational and Environmental Hygiene* 12:302-308, 2015.

Bernard, T. E., I. Iheanacho. Heat index and adjusted temperature as surrogates for wet bulb globe temperature to screen for occupational heat stress. *Journal of Occupational and Environmental Hygiene* 12:323-333, 2015.

List of Published Work in MyBibliography:
http://www.ncbi.nlm.nih.gov/sites/myncbi/thomas.bernard.1/bibliography/47140041/public/?sort=date&direction=descending

## *Book Chapters (past 10 years)*

Bernard, T. E. Thermal Stress. In Niland, J and Elam, LA (eds), *Fundamentals in Industrial Hygiene*, 7th ed. Chicago: National Safety Council, 2021.

## *Editorials/Letters/Other Publications (past 10 years)*

Bernard, T. E. Oral and written testimony before the Committee on Education and Labor at the Subcommittee on Workforce Protections hearing entitled *"From the Fields to the Factories: Preventing Workplace Injury and Death from Excessive Heat"* 11 July 2019

Bernard, T. E. Occupational Heat Stress In USA: Whither We Go? (Editorial). *Industrial Health* 52:1–4, 2014

Kjellstrom T., S-I Sawada, T. E. Bernard, K. Parsons, H. Rintamaki, I. Holmér. Climate change and occupational heat problems (Editorial). *Industrial Health* 51:1-2, 2013

## *Workforce Development / Professional Development Offerings (past 10 years)*

Understanding Threats to Hearing Beyond Noise (Section on maternal/fetal noise exposure, 1 hr). PDC 303, AIHA Connect, Columbus OH, 18 May 2024; and AIHA Connect 17 May 2025.

Occupational Heat Stress. 6 hr. Puerto Rico Local Section of AIHA 1 May 2024

Heat Stress Summit. 2.5 hr. Organized by USF SafetyFlorida. Tampa FL 15 June 2023 and Miami FL 20 July 2023.

Occupational heat stress. 8 hr. CNS Y12 National Security Complex, Roane State Community College, Oak Ridge TN, 30 March 2022

Heat stress management in 2022: What we know, what we believe we know, and somethings we don't know. 4 hr. Carolinas AIHA, Raleigh NC, 18 March 2022

Heat Stress: Old and New Wine in New Bottles. 4 hr. Joint Fla AIHA and Sunshine ERC PDC, Remote, March 18, 2021

Lifting TLV, Webinar (1 h), ACGIH, 21 October 2020

Ergonomics, USF OTIEC Class (in-person), 2.5 hr, Orlando FL, 2 February 2020

Thermal Environment, BOHS W502, 40 h, ROSE Environmental Training Center, Couva Perseverance Village, Trinidad, 18-22 November 2019

Ergonomics, OSHA 10-h Certification Class, USF OTIEC, 31st Florida Safety and Health Conference, Orlando 12 August 2019.

Ergonomics, OSHA 10-h Certification Class, USF OTIEC, 30th Florida Safety and Health Conference, Orlando 20 August 2018.

Current Topics for Managing Occupational Heat Stress. 2.5 hr. ACGIH® Webinar, May 10, 2018.

Ergonomics, OSHA 10-h Certification Class, USF OTIEC, 29th Florida Safety and Health Conference, Orlando 7 August 2017.

Occupational Heat Exposure Webinar. 1.5 hr. Joint USF Safety Florida and USFOTI with OSHA, July 20, 2017

Practical Heat Stress Management with Nuances. 4 hr. Joint Fla AIHA and Sunshine ERC PDC, Tampa FL, March 24, 2017

Practical Heat Stress Management with Nuances. 3 hr. Joint University of Puerto Rico and Sunshine ERC PDC, San Juan PR, March 14, 2017

Comments on Heat Stress: Acclimatization, Metabolic Demands, Notes on Heat Index, and Notes on Emergency Plan. 0.5 hr. OSHA Regional Industrial Hygiene Webex Meeting, April 11, 2016

Practical Heat Stress Management using the ACGIH® TLV® for Heat Stress and Strain. 2.5 hr. ACGIH® Webinar, March 4, 2015.

## *Presentations (past 10 years)*

Bernard, T. E. Essentials of Heat Stress Management, AAOHN Conference, Pittsburgh PA, 1 April 2025.

Bernard, T. E. What I Learned About Heat Stress. Dillon-Carnahan Lecture, Southeastern Regional Research Symposium, San Juan, Puerto Rico, 6 March 2025.

Bernard, T. E. Heat Stress Management and USF Research. FL AIHA Spring Meeting, 11 April 2024

Bernard, T. E. and J. T. Spector. What the new TLV® for heat stress means for you. AIHCE, 24 May 2023.

Spector, J., L. Kincl, T. E. Bernard. The heat is on: Understanding heat safety best practices. BCSP GLS, online 10-12 May 2022.

Bernard, T. E., Occupational heat stress. Simposio de seguridad y salud ocupacional, visibilizando la epidemiología ocupacional ecuatoriana, Universidad de Las Américas, Ecuador, 3 February 2021

Bernard, T. E., Heat Stress. Invited Lecturer (2h), Diponegoro University, 22 September 2020.

Bernard, T. E., Ergonomics. Invited Lecturer (2h), Diponegoro University, 21 September 2020.

Bernard, T. E. Essential features of heat stress management. West Michigan Industrial Hygiene Society, 15 April 2019

Bernard, T. E. Underlying risk profiles of WBGT-based occupational heat exposure limits. American College of Sports Medicine, Minneapolis, 2 June 2018

Bernard, T. E. Understanding heat stress exposure limits. American Occupational Health Conference, New Orleans, 29 April 2018

Bernard, T. E. Serendipity in occupational heat stress exposure assessment. Environmental Health Seminar Series, University of Washington, Seattle WA, November 2017

Bernard, T. E., X. P. Garzón-Villalba, Y. Wu, C. D. Ashley. Revisiting the occupational exposure limit (OEL) to heat stress based on wet bulb globe temperature. 17th International Conference on Environmental Ergonomics, Kobe Japan, October 2017

Garzón, X. P., A. Mbah, S. Schwartz, M. Hiles, H. Moore, T. E. Bernard. Exertional heat illness and acute injury related to WBGT during Deepwater Horizon clean-up. 17th International Conference on Environmental Ergonomics, Kobe Japan, October 2017

Garzon-Villalba, X. P., Y. Wu, C. D. Ashley and T. E. Bernard. Ability of WBGT indices to discriminate between sustainable and unsustainable heat stress exposures. ASSE Professional Conference, Denver CO, June 2017

Bernard, T. E., X. P. Garzón-Villalba, Y. Wu, C. D. Ashley. Is a Heat Stress Exposure Sustainable? AIHce, Seattle WA, June 2017

Bernard, T. E., X. P. Garzón-Villalba, Y. Wu, C. D. Ashley. Heat stress limit profiles for nonwoven clothing. SouthON Meeting, Nashville TN, April 6-7, 2017

Bernard, T. E. ACGIH® TLVs® for Physical Agents – Some Updates. Fla AIHA Spring Meeting, Tampa FL, March 23, 2017

Bernard, T. E., D. Yantek, E. D. Thimons. Estimation of metabolic heat for refuge alternative testing. SME Annual Conference and Expo, Denver CO, February 19-22, 2017

Bernard, T. E., C. D. Ashley. Comparison of Static Total Evaporative Resistance to Apparent Total Evaporative Resistance and WBGT-based Clothing Adjustment Values. (Invited) The 11th International Meeting on Thermal Manikin and Modelling (11i3m), Suzhou, China, October 12-14, 2016.

Bernard, T. E., X. P. Garzón-Villalba, A. Mbah, Y. Wu, M. Hiles, H. Moore, S. Schwartz. Exertional heat illness and acute injury related to ambient temperature, 5th Annual Southeastern States Occupational Network (SouthON) Meeting, New Orleans, March 8-9, 2016

Garzón-Villalba, X. P.,Y. Wu, T. E. Bernard. Validity of WBGT-based occupational exposure limit: Preliminary findings, 5th Annual Southeastern States Occupational Network (SouthON) Meeting, New Orleans, March 8-9, 2016

Bernard, T. E., I. Iheanacho. Heat index and adjusted temperature as surrogates for wet bulb globe temperature to screen for occupational heat stress. AIHce, Salt Lake City, June 2015

Bernard, T.E. Heat stress management in aluminum smelters. International Symposium – Heat Stress Prevention, Mitigation, Monitoring and Management, Sohar Oman, April 26, 2015

Developing a Personal Research Agenda for the Role of Clothing in Heat Stress. Deep South Center for Occupational Health & Safety, Dillon – Carnahan Research Symposium, Auburn AL, April 10, 2015