

Professional Biography for Wane A. Baker, P.E., CIH



Current Position

Wane A. Baker, Senior Consultant, is a Division Manager with Michaels Engineering, a diversified environmental and engineering consulting firm with offices in La Crosse and Madison, Wisconsin and St. Paul, Minnesota.

Certifications, Licensure

- Licensed Professional Engineer: Minnesota, Wisconsin, Iowa
- Certified Industrial Hygienist, Comprehensive Practice, ABIH #8708
- Certified Asbestos Inspector, Wisconsin ID# AII-118364

Academic Background

Bachelor of Mechanical Engineering (BMechE), University of Minnesota – 1982

Undergrad courses in life sciences (biology, chemistry), particle technology, thermodynamics, combustion, heat and mass transfer, environmental engineering. Graduate-level studies in applied thermodynamics and medical mycology.

Recent Professional Activities and Honors

- Peer Reviewer, Practitioner Track, *Indoor Air 2011* Conference
- Peer Reviewer, *Journal of ASTM International* (2010-present)
- Peer Reviewer, *ASHRAE Journal* (2004-present)
- **Expert testimony** on the forensic investigation of building failures, as well as the sampling and interpretation, management, remediation and verification, and building physics concepts associated with damp buildings and occupant health (1998-present)
- Elected to American Industrial Hygiene Association, IEQ Committee, **Vice-Chair**, 2011-2012; **Secretary**, 2010-2011; **Secretary-Elect**, 2009-2010
- **Board of Directors**, Indoor Air Quality Association (IAQA), 2007-2010
 - Chair, Government Affairs Committee
 - Chair, Webinar Sub-Committee
 - Member, Ethics Committee
 - Chair, Conflict of Interest Sub-Committee
 - Member, Education Committee
 - Member, Finance Committee
 - Member, Convention Committee
 - Member, Futures Committee
- Elected to IAQA Executive Committee: **First Vice-President**, 2009-2010
Treasurer, 2008-2009

Professional Affiliations

AIHA – American Industrial Hygiene Association

- Vice-Chair, Indoor Environmental Quality (IEQ) Committee (2011-2012)
- Mold Task Force, AIHA Wisconsin Section with the State Division of Public Health
- Full Member
- Diplomate, American Academy of Industrial Hygiene

IAQA – Indoor Air Quality Association

- Elected to serve as First Vice-President (2009-2010); Treasurer (2008-2009)
- Elected to Board of Directors, October 2007
- Director, Milwaukee IAQA Chapter (2007-Present)
- Full member

ASHRAE – American Society of Heating, Refrigerating and Air-Conditioning Engineers

- Environmental Health Committee (2003-2007)
- Steering Committee, Triennial Indoor Air Quality Conference: “IAQ 2007: Healthy and Sustainable Buildings”, Baltimore, Maryland, October 2007
- Peer Reviewer, ASHRAE Journal (2004-2006)
- Primary Coordinator and Speaker for Satellite/Webcast Seminar, “Mold in the Building Environment”, April 13, 2005 (viewed by more than 20,000 participants)
- Lead Editor on revisions to *2005 Fundamentals Handbook*, Chapter 9: “Indoor Environmental Health”
- President, La Crosse Area Chapter (2001-2002)
- President-Elect, La Crosse Area Chapter (2000-2001)
- Chair and Newsletter Editor, Minnesota Chapter (1998-2000)
- Full member

ISIAQ – International Society of Indoor Air Quality and Climate: Full Member

WEHA – Wisconsin Environmental Health Association: Member

Summary

A graduate of the University of Minnesota’s Institute of Technology, Wane A. Baker is a licensed Professional Engineer (P.E.) and Certified Industrial Hygienist (CIH) with more than 30 years of experience in the operation and maintenance of various building types, including 28 years at a professional level in environmental consulting, construction and energy conservation. He has worked as an air quality professional on a full-time basis for more than 20 years, providing a unique combination of education and experience as a forensic engineer, building scientist and occupational hygienist.

Mr. Baker has managed or personally conducted thousands of IAQ assessments. He performs forensic investigations of building failures, and offers expert testimony on the building physics aspects, underlying causes, sampling methods and interpretation, management and remediation of water damage, related microbial amplification and impacts on occupant health.

Wane is an active member of the American Industrial Hygiene Association, the Indoor Air Quality Association, the American Society of Heating, Refrigerating, and Air-Conditioning Engineers, and the International Society of Indoor Air Quality and Climate.

Publications

Invited Technical Reviewer: ASHRAE *Indoor Air Quality Guide: Best Practices for Design, Construction, and Commissioning*, July 2008

“Look Below Surface for IAQ Problems”, *IAQ Applications*, Vol. 6, No. 3, Summer 2006, ASHRAE, Atlanta, Georgia

Invited Technical Reviewer: Brandys, R.C. and G.M. Brandys “Global Occupational Exposure Limits for Over 5,000 Specific Chemicals”, OEHCS, Inc. Publications Division, Hinsdale, IL, 2006

“Building Maintenance Affects Indoor Air Quality”, *IAQ Applications*, Vol. 5, No. 3, Summer 2005, ASHRAE, Atlanta, Georgia

“Pro-IAQ, Anti-Mold”, M/E Roundtable, *Consulting-Specifying Engineer*, April 2005

“Mold Certifications for Sale”, Construction Corner, *Wisconsin Builder*, July 2004

Invited Technical Reviewer, Minnesota Department of Health, *Recommended Best Practices for Mold Investigations in Minnesota Schools* (2001), and *Recommended Best Practices for Mold Remediation in Minnesota Schools* (2002)

“Depressurization System Relieves IAQ Symptoms in School Occupants”, *IEQ Strategies*, May 1998

Seminar Faculty (partial list)

La Crosse Area Builders Association, Building Education Day, “Attic Ventilation – Where’s the Science?”, La Crosse, Wisconsin, December 2010.

Milwaukee Chapter of the Indoor Air Quality Association (IAQA), “Testing HEPA-filtered Devices: NAMs, Scrubbers and Vacuums”, West Allis, Wisconsin, April 2009.

Indoor Air Quality Association 12th Annual Meeting and Exposition, “ERMI for Use in the Science of Building Forensics – An Introduction and Overview”, Fort Worth, Texas, February 2009.

Indoor Air Quality Association 12th Annual Meeting and Exposition, “The Great Assessment and Post-Remediation Verification Debate – An Introduction and Overview”, Fort Worth, Texas, February 2009.

St. Paul-Minneapolis Chapter of the IAQA, “The Great Sampling Debate – An Introduction: What’s All the Fuss About?”, St. Paul, Minnesota, October 2008.

Milwaukee Chapter of the IAQA, “LEED Credit 3.2: Construction IAQ Management Plan, Before Occupancy – Option 2: Air Quality Testing”, West Allis, Wisconsin, October 2008.

Indoor Air Quality Association 11th Annual Meeting and Exposition, “The Great Sampling Debate – An Introduction: What’s All the Fuss About?”, Tampa, Florida, June 2008.

American Industrial Hygiene Conference and Exposition (AIHce), “Proposed Post-Remediation Verification Acceptance Standard for Surface Mold Sampling Results”, with W. Tang, et al, Podium Session 110, Minneapolis, Minnesota, June 2008.

Western Technical College, *Homesmarts: Before You Build*, “Indoor Environmental Quality – Back to the Basics”, La Crosse, Wisconsin, March 2008.

Restoration Industry Association (formerly ASCR), RIA Fall Conference, *Environmental Conference: “Alternative Cleaning Methods – A Critical Review of Ten Non-Traditional Methods”*, Garden Grove, California, October 2007.

American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) Triennial Indoor Air Quality Conference “IAQ 2007: Healthy and Sustainable Buildings”, Chair: Technical Session 1 “Big Picture IAQ & System Selection”, Technical Session 7 “IAQ in Homes”, and Technical Session 9 “Seminar Presentations (Part II)”, Baltimore, Maryland, October 2007.

Restoration Industry Association, 62nd Annual Conference: The Education Summit, *Pros and Cons of Unconventional Methods of Remediation*, “An Overview: What Are ‘Conventional’ Methods?”, Lake Buena Vista, Florida, March 2007

ASHRAE Winter Meeting, Seminar Chair: *Environmental Health: Particulate Matter Sources, Health Effects and Control Strategies*, Dallas, Texas, January 2007.

Wisconsin Healthcare Engineering Association (WHEA), *Healthcare Construction Certification Program*, “Particulate Matter and Filtration in Healthcare” and “Opportunistic Fungal Pathogens”, Appleton, Wisconsin, November 2006.

HR Associates and KFI Engineering, *Healthcare Construction Certification Program*, “The Microbiology of Opportunistic Fungal Pathogens”, St. Paul, Minnesota, September 2006.

ASHRAE Annual Meeting, Seminar Chair: *An Update on Environmental Health Research and Applications*, Quebec City, Quebec, June 2006.

Iowa Heat Pump Association, GeoExchange Conference 2006, *Damp Buildings and Health: Managing Microbial Growth in Homes*, Dubuque, Iowa, March 2006.

ASHRAE Winter Meeting, *Owning and Operating Costs of Temporary and Permanent HVAC Equipment During Construction*, “Mold Growth Associated with Using the Permanent Systems During Construction”, Chicago, Illinois, January 2006.

Iowa State University Extension, Energy Efficient & Healthy Homes Conference, *Managing Microbial Growth in Homes*, Cedar Falls, Iowa, October 2005.

IAQA-AmIAQ-IESO 2005: The Unification Conference, Workshop 2: “Mold Standards and Guidelines – Exploring Methods of Defining Contamination Levels and Applying Them to Practice”, Orlando, Florida, October 2005.

ASHRAE Annual Meeting, *Critical Topics in Environmental Health*, “Health in ASHRAE Standards: Who Are These ‘Cognizant Authorities’?”, Denver, Colorado, June 2005.

ASHRAE Annual Meeting, *Environmental Health Issues: Mold and Other Indoor Environmental Concerns*, “Preventing Mold in New Construction”, Nashville, Tennessee, June 2004.

ASHRAE Learning Institute, *Humidity Control in Commercial Buildings*, Northeast Wisconsin ASHRAE Chapter, DePere, Wisconsin, April 2004.

ASHRAE Learning Institute, *Humidity Control in Commercial Buildings*, La Crosse Area ASHRAE Chapter, La Crosse, Wisconsin, November 2003.

Southern Minnesota Municipal Power Agency, *Indoor Air Quality Advances*, a full-day seminar in four segments, Rochester, Minnesota, October 2003.

- “Advances in Microbial Remediation and Moisture Control”
- “Recent Developments in the Art and Science of Microbial Investigations”
- “Advances in Microbial Testing and Analysis”
- “Future Directions in the Art and Science of Microbial Investigations”

Lorman Education Services, *Solving Water Intrusion and Mold Problems*, “The Multi-Disciplinary Nature of ‘Mold’ Investigations and Moisture Control”, Brookfield, Wisconsin, September 2003.

Lorman Education Services, *Advances in Environmental Mold Issues In Wisconsin*, “Recent Developments in the Art and Science of Microbial Investigations” and “Future Directions in the Art and Science of Microbial Investigations”, Wausau, Wisconsin, July 2003.

Wisconsin Focus on Energy with the Energy Center of Wisconsin, *Building Operator Certification*, “Indoor Air Quality”, June 2003, Madison, Wisconsin

Wisconsin Focus on Energy with the Energy Center of Wisconsin, *Building Operator Certification*, “Indoor Air Quality”, Chippewa Falls, Wisconsin, June 2003

Lorman Education Services, *Advances in Environmental Mold Issues In Wisconsin*, “Recent Developments in the Art and Science of Microbial Investigations” and “Future Directions in the Art and Science of Microbial Investigations”, Madison, Wisconsin, April 2003.

Wisconsin Focus on Energy with the Energy Center of Wisconsin, *Building Operator Certification*, “Indoor Air Quality”, Appleton, Wisconsin, November 2002.

Wisconsin Focus on Energy with the Energy Center of Wisconsin, *Building Operator Certification*, “Indoor Air Quality”, October 2002, Milwaukee, Wisconsin

Wisconsin Healthcare Engineering Association, Chapter V, *Rediscovering Your Healthy HVAC System*, “HVAC Hygiene: How Clean is Clean?” Eau Claire, Wisconsin, April 2002.

Southern Minnesota Municipal Power Agency, *Indoor Air Quality Workshop*, a full-day seminar in four segments, Rochester, Minnesota, March 2002.

- “Indoor Environmental Quality, The Basics – and More”
- “IAQ and Ventilating Systems: Common Findings – A Baker’s Dozen”
- “Cleaning for Health: Protecting the Indoor Environment”
- “Developing an IAQ Management/Action Plan”

Xcel Energy Training Services, *Indoor Air Quality Workshop*, a full-day seminar in four segments, Minneapolis, Minnesota, October 2001.

- “Indoor Environmental Quality, The Basics – and More”
- “IAQ and Ventilating Systems: Common Findings – A Baker’s Dozen”
- “Cleaning for Health: Protecting the Indoor Environment”
- “Developing an IAQ Management/Action Plan”

Technical Presentations (partial list)

Indoor Air Quality Association 13th Annual Meeting and Exposition, “Applied Microbiology Meets Building Science: The Multi-Disciplinary Nature of ‘Mold’ Investigations”, Tampa, Florida, March 2010.

38th Annual Iowa Governor’s Safety and Health Conference, “An Update on ASHRAE Standard 62.1”, Cedar Rapids, Iowa, November 2009.

30th Annual Joint Education Conference of the Wisconsin Environmental Health Association (WEHA) and the Wisconsin Bureau of Environmental and Occupational Health (BEOH), Wisconsin Division of Public Health, *Back to the Future*, “How Do Air Filters Really Work?” and “Why Do People Get Sick in Damp Buildings?”, Wisconsin Dells, Wisconsin, September 2009.

29th Annual Joint Education Conference of the Wisconsin Environmental Health Association (WEHA) and the Wisconsin Bureau of Environmental and Occupational Health (BEOH), Wisconsin Division of Public Health, *Healthy Communities and Healthy People*, “Applying Good Science to Indoor Air Investigations”, Middleton, Wisconsin, April 2009.

Indoor Air Quality Association 12th Annual Meeting and Exposition, “IAQ and Ventilating Systems: A Baker’s Dozen of Common Findings”, Fort Worth, Texas, February 2009.

La Crosse ASHRAE Chapter, “Flood Restoration: Health Hazards of Black Water”, La Crosse, Wisconsin, October 2008.

Energy Center of Wisconsin, *Better Buildings: Better Business Conference*, “Enhancing the Indoor Environment – Back to the Basics”, Wisconsin Dells, Wisconsin, March 2008.

Energy Center of Wisconsin, *Better Buildings: Better Business Conference*, “Attic Ventilation – Where’s the Science?”, Wisconsin Dells, Wisconsin, February 2007.

Energy Center of Wisconsin, *Better Buildings: Better Business Conference*, “Damp Buildings, Mold, and Occupant Health: A Critical Review”, Wisconsin Dells, Wisconsin, January 2006.

University of Wisconsin System, Annual Safety & Loss Prevention Meeting, “Applied Microbiology Meets Building Science: The Multi-Disciplinary Nature of ‘Mold’ Investigations”, University of Wisconsin – Eau Claire, Wisconsin, May 2004.

Wisconsin Environmental Health Association (WEHA), *Chemical Hazards – HazMat Incidents, Terrorism, Clandestine Drug Labs*, “Meth Lab Remediation: Guidance Documents & Cleanup Goals”, Madison, Wisconsin, April 2004.

Wisconsin Council of Safety, Environmental Conference/Expo, “Applied Microbiology Meets Building Science: The Multi-Disciplinary Nature of ‘Mold’ Investigations”, Wisconsin Dells, Wisconsin, November 2003.

Wisconsin ASHRAE Chapter, “Applied Microbiology, Managing Microbial Growth in Buildings”, Wauwatosa, Wisconsin, October 2003.

Wisconsin Association of School Business Officials (WASBO) 5th Annual Facilities Management Conference Facilities Conference, “Applied Microbiology, Managing Microbial Growth in Buildings”, Wisconsin Dells, Wisconsin, February 2003.

Iowa Chapter ASHRAE, “IAQ and Ventilating Systems: Common Findings – A Baker’s Dozen”, Des Moines, Iowa, February 2003.

Energy Center of Wisconsin, *Smarter Buildings: Smarter Business Conference*, “Indoor Environmental Quality: Contaminants & Control Strategies”, Wisconsin Dells, Wisconsin, February 2003.

Northeast Wisconsin ASHRAE Chapter, “Applied Microbiology, Managing Microbial Growth in Buildings”, Kimberly, Wisconsin, January 2003.

La Crosse Area ASHRAE Chapter, “Applied Microbiology, Managing Microbial Growth in Buildings”, La Crosse, Wisconsin, December 2002.

Association of School Business Officials (ASBO) International, 88th Annual Meeting, “Toxic Mold and Sick Schools, Faculty Perceptions and Student Performance”, Phoenix, Arizona, October 2002.

Wisconsin Department of Administration, Division of Facilities Development, “Indoor Environmental Quality, The Basics – and More”, Stevens Point, Wisconsin, July 2002.

Wisconsin Schools Clean Air Coalition, *Indoor Air Quality Tools for Schools Workshop*, Madison, Wisconsin, June 2002.

- “Cleaning for Health: Protecting the Indoor Environment”
- “Indoor Environmental Quality, The Basics – and More”

Milwaukee Public Schools, *Indoor Air Quality Tools for Schools Workshop*, “Indoor Environmental Quality, The Basics – and More”, Milwaukee, Wisconsin, February 2002.

Wisconsin School Safety Coordinators Association, 34th Annual Spring Conference & Exposition, “Indoor Environmental Quality, The Basics – and More”, Wisconsin Dells, Wisconsin, February 2002.

Wisconsin Association of School Business Officials, 4th Annual Facilities Management Conference “IAQ and Ventilating Systems: Common Findings – A Baker’s Dozen”, Wisconsin Dells, Wisconsin, February 2002.

2001 Wisconsin Education Association Council (WEAC) Convention, *Providing Healthy Learning Environments: Indoor Air Quality Tools for Schools*, “Indoor Environmental Quality, The Basics – and More”, Milwaukee, Wisconsin, October, 2001.

American Industrial Hygiene Association Iowa-Illinois Chapter, “IAQ and Ventilating Systems: Common Findings – A Baker’s Dozen”, Rock Island, Illinois, March 2001.

Wisconsin Schools Clean Air Coalition, *Indoor Air Quality Tools for Schools Workshop*, “Indoor Environmental Quality, The Basics – and More”, La Crosse, Wisconsin, March 2001.

Madison ASHRAE Chapter, “IAQ and Ventilating Systems: Common Findings – A Baker’s Dozen”, Madison, Wisconsin, December 2000.

Northeast Wisconsin ASHRAE Chapter, “IAQ and Ventilating Systems: Common Findings – A Baker’s Dozen”, Appleton, Wisconsin, December 2000.

La Crosse Area ASHRAE Chapter, “IAQ and Ventilating Systems: Common Findings – A Baker’s Dozen”, La Crosse, Wisconsin, March 2000.

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